

# TRANSCRIPT

## Learning Unboxed



Driven by Goals.  
Guided by Strategy.  
Powered by Intention.

Episode #305

Manfred Paul Stapff:

---

**Manfred Paul Stapff:**

The responsibility of correct information shifts more and more to the receiver of this information. We are not passive consumer of information anymore because we cannot believe anymore everything what's out there.

**Annalies Corbin:**

Welcome to Learning Unboxed, a conversation about teaching, learning, and the future of work. I'm your host and chief goddess of the PAST Foundation, Annalies Corbin. We know the current model for education is obsolete. It was designed to create fleets of assembly line workers, not the thinkers and problem solvers needed today. We've seen the innovations that are possible within education, and it's our goal to leave the box behind and reimagine what education can look like in your own backyard.

-----

**Annalies Corbin:**

Welcome to today's episode of Learning Unboxed. As always, I am excited to talk with another great innovator. And joining us today is Dr. Manfred Stapff, Chief Medical Officer at TriNetX, and author of Real-World Evidence Unveiled, and the host of the podcast, The Real-World Evidence Perspective. So, Dr. Stapff, welcome to Learning Unboxed.

**Manfred Paul Stapff:**

Thank you, Annalies. Thank you for having me. I'm really excited to have a discussion with you. Minor correction, I was Chief Medical Officer at TriNetX, but this is a very important role in my career because this brought me to Real-World Evidence. So, it's not my current job title, but something which really formed my career and where I learned a lot about the real world and how to deal with data and how to deal with information and what is serious and what is perhaps not serious.

**Annalies Corbin:**

I love that. So, we'll come back to that then. Thank you for that correction. I appreciate that. You know, as we get started, a little bit of context for our listeners. First and foremost, so I've had the privilege and the pleasure to have the opportunity to work with and interact with Dr. Stapff a couple of times now. So, we have done some

exchanges with podcasts. We've interviewed guests together. I had the opportunity to be on his show, so I'm really excited about him being on Learning Unboxed.

What I'm really excited about is the idea of his research and his work, which really is around, how do we know what's real? And for our educators out there, we're dealing with this. It's not just an emergent theme, it's a right now, it's very much in our faces, and we have a lot of opportunity here as it relates to helping the students that we teach, our wonderful and amazing learners, figure this out because the world is not what it used to be in many ways, and the rate and pace of the information that we're bombarded with is pretty intense.

And so, as we think about his work and his use of real-world data to help listeners uncover clarity amongst confusion, that's what we really wanna be able to talk about today. And his work in healthcare, as he indicated in the correction of my understanding of his current many lists of titles, is relevant to that. So, as we think about how we can help students make better decisions and see the world more accurately, so I'm gonna revert to Manfred since it's a casual conversation for us, but help us understand. Let's start with the big picture of your work. Why does this matter to you? And then, how do you think about why the rest of the world should care about that?

**Manfred Paul Stapff:**

Yeah. The real big picture is actually that all of us, whether we are students, teachers, regulators, politicians, we are making decisions based on information which we have. And therefore, you can only make correct decisions if the information is correct. My area, the medicine, the FDA, for example, approves medication based on information about safety and about efficacy of a drug, whether it works or whether it makes people sick or whether it has side effects. And this information comes from clinical trials. So, the next step in this big picture is how reliable is the information which comes from clinical trials?

And if you are a politician, you'll make a decision about a law or a legislation based on information you have about the society, or about the crime rate, or about illegal immigration. So, how reliable is this information? If we vote as citizens, we make our voting decision based on what we see in TV or what we hear in social media or what we read in the newspaper. So, we can only make a reliable or an appropriate voting decision if the information we get is reliable and is correct.

Unfortunately, in our hectic world and our social media-dominated world, actually, reliable information, correct information is more the exception. We are more overwhelmed with misinformation, with fake news, with invented stories. So, it's

getting more and more difficult to figure out what is actually correct. We get more information than we got ever, thanks to internet, thanks to TV, thanks to other media, social media. We are overwhelmed with information. So, we get the volume of information is increasing, increasing, increasing. But it was never so difficult as now to figure out which of the information is the correct one and which of this information to take for our decision-making.

So, that's the big picture. It needs educated people on the receiver's side. You know definitely from communication and from teaching theory that there is a communication theory that there is a sender and there's a receiver. And both are responsible for a correct communication between the sender and the receiver. I think, now, these days, the responsibility gets more and more shifted to the receiver, that the receiver needs to be prepared to evaluate the information, whether it's believable or whether it's correct.

There are simple methods, we can talk about it later. The classical red face test. If you hear something the first time, you think for a few minutes and kind of think, "Can this be possible? Is this really possible?" An example, if you get weight loss advertising in TV, and they say, "Oh, lose 20 pounds in one week," and just think, calculate a little bit. Is this even possible? This is more than a pound per day. How many calories are this? This is ridiculous. So this, the red face test. Don't believe things in the very, very first second.

### **Annalies Corbin:**

I wanna circle back around a little bit about the idea of a data set. And the reason I wanna kinda dig in there a little bit before we go any further in this conversation is educators are doing a tremendous amount of work just on the teaching side as it's tied to data. And there's a lot of push and a lot of professional development trying to get educators to understand the data, the data sets that they get about their own students, and about learning, and about the impacts of that, and about next steps.

So, educators are being inundated with requests and training saying, "Hey, you as a teacher, you need to, (A), use data from your students and about your students, but more importantly, we're gonna do a lot of work to help you learn how to understand that data set." Now, in that case, there's no question about is the data set real because it's data that's being internally generated from their students, from their class, for that educator.

But then, and here's where my question gets in, because on the one hand, that's a verified data set that we know is correct, or that they know can have high fidelity around. But how do you take this idea that our educators need to be using data, real

data, and using it in different types of way to really help them make decisions, and translating that into a process by which educators can help students understand what's real and what's valid? Back to one of the very first things you said in our conversation, how do we know that pharmaceutical data is actually good data or valid data, so that I could then use that data to make really informed decisions?

We are putting real data sets – and I'm gonna use real data sets in quotes here – in front of students all the time now because the science says training and teaching kids to use real stuff is gonna have a greater impact on learning than a bunch of hypotheticals, and we know that in practice to be true. So, my question to you is, how do we actually teach kids to figure out what's good data and what's flawed data when all they're being told is, "This is data, this is real data, and it's good data"? Back to your point, who do I believe, right?

**Manfred Paul Stapff:**

Yeah. It's a very, very important point not because it's data, it's not automatically true; not because something is a statistic and something has a mean value or a median value, an average or a standard deviation, does not necessarily mean that you automatically have to believe it. So, this is a really very important point.

Data alone or statistics alone do not make a story true; and therefore, you have to first evaluate, where do the data come from? In which environment have the data been taken? And if I may come back to medical research, we have two ways of collecting data. This is the experiment, the clinical trial, where patients are evaluated in a very organized and structured environment, very standardized. There are certain criteria whether a patient can enter a clinical trial because one wants to have relatively standardized patients with a standardized diagnosis without any risk factors and at a certain age, and then all these kind of things, because science always wants to be clean.

But this is a very artificial environment. So, the data which come from such clinical studies are usually considered as a very, very high quality science. However, this is an artificial environment. So, everybody who goes to a doctor knows what real-world the doctor is. You have to wait the time, doctor has not too much time to talk to you, there will be some blood taken, there's not so much conversation going on, you'll get the results in two days or in two weeks, you perhaps get a prescription, and you perhaps take the prescription then from the pharmacy, and then you perhaps take the medication, or you don't take the medication, or you forget the medication.

So, the real-world medicine is a total chaos. So, what is real? Is the artificial experiment where everything is regulated by a study protocol, is this the reality? Or is

the chaos which happens in the physician's office where, sometimes, things happen, sometimes they are not done, sometimes they are forgotten, is this the reality?

And this is in medical research currently a good conversation. These are not two competing methods. These are complementing methods. So, everything, what gets found in the artificial scientific environment needs to be confirmed then in the real world that perhaps, when you buy a car, you have a certain gas mileage in the window sticker, which is usually calculated by scientific methods, the temperature in the engine and all this kind of stuff and a certain protocol of-

**Annalies Corbin:**

But you never get that mileage, right?

**Manfred Paul Stapff:**

Exactly.

**Annalies Corbin:**

It's always less than that. It's always less.

**Manfred Paul Stapff:**

It is always. It's always less-

**Annalies Corbin:**

Always.

**Manfred Paul Stapff:**

... because the one what you see, the window sticker is the science according to some kind of driving protocols evaluated, but no human being drives like that.

**Annalies Corbin:**

Exactly. We just can't help ourselves, right? Exactly.

**Manfred Paul Stapff:**

So, you can only believe the mileage when you look at both values together. What does the window sticker say? The window sticker says 25 miles per gallon, and when you calculate a little bit and you drive the car, then you find perhaps 24 or 23 miles per gallon. So, it's then on you is to say, "Is this difference something relevant?" or you understand this is reality versus science. If the difference is too big, if the window sticker says 25 miles per gallon and you see only 18 miles per gallon, then you say, "Now, it's time to sue the car company because this false advertising." But this is what we have to live for.

So, the first thing is just that the data says something and the statistic says something doesn't make it so. So, first question is, where do the data come from? And science can never really exactly predict the reality simply by measuring things. We interfere with something.

Another example in clinical trials is all these patients in clinical trials, of course, they get an informed consent form which they have to sign because this is science or they have to be in agreement-

**Annalies Corbin:**

Human subject research, right

**Manfred Paul Stapff:**

... that they are not part of science and all this kind of paperwork. But just because they know that they are observed in a clinical trial, they behave in a different way. So, just by measuring things, we interfere with things.

Or if I may take another car example, you can never measure the temperature in a gasoline engine because just by inserting a thermometer into the cylinder, you change the burning and you change the process. So, science is never totally 100% exact. Albert Einstein knew that already a hundred years ago. Heisenberg knew that 100 years ago. There are many, many theoretic physicists who know that, that science can never exactly represent the reality. So, we always have to live with this difference between theoretical standardized science and real-world.

**Annalies Corbin:**

I love that. Yeah.

**Manfred Paul Stapff:**

So, first question, where do the data come from? Then, the next question is, how do the statisticians evaluate the data? How do they present the data? Just because a statistician calculates a mean value, a median value, or a confidence interval, or a risk reduction, does not make it absolutely true. This is just statistics. In Germany, we had a saying that said, "I don't believe any statistics unless I have falsified it myself."

**Annalies Corbin:**

Pretty funny, yeah. Do you think then that as you think through these pieces and parts then, Manfred, so it seems to me, and especially in a world where we have more and more AI, these large language models are accelerating exponentially just at amazing rates. And it's not that AI is new, but the accessibility of public use of AI and AI tools is on the upswing.

So, do you think that because we have these incredible tools that are available to us that as our educators are working with students to understand data, that by simply helping students to get into the practice of always starting with a question as it relates to data that they're gonna be using for anything, is to say, "Where is this data coming from? How was this data originally validated?"

The tools that we have at our hand, even on the backside of a simple Google search, if you ask it that, it will find that information for you, right? But then, how do we help students figure out that the response I'm receiving is actually correct data? And I think that that's really where the wrestle is. And in my educator mind, it's like, "Oh, that's super awesome because the growth opportunity for human understanding is so incredibly powerful in that moment because it is so convoluted." But how would you mentor an educator who's wrestling with this with their high school students right now?

**Manfred Paul Stapff:**

It's an extremely important point. And again, thank you very much for bringing that up. Always look at the source. Where does it come from? Who says so? So, in ChatGPT, for example, you can click on the source, and then you can find, is this source an article in The New York Times or in the New York Post, or is it an article in the New England Journal of Medicine? Or is it an article in Science? So, is this source a more or less accepted scientific source, or is it a secondary or tertiary source?

So, whatever is in The New York Times, of course, is not the primary source because The New York Times also reports what they hear from somewhere or read from somewhere. Now, New York Times, one can say it's a relatively responsible journalism, but not all newspapers are responsible journalism. Some people are not even journalists. They don't even follow the journalist ethical code, which means look at the source, look at several sources, verify the source, don't take sides, uh, report objectively, differentiates facts from comments. These are some ethical rules of journalism.

Not all newspapers and definitely most likely nobody in social media follows ethical reporting rules of journalism. So, go to the source is basically the very, very first question. Try to go as back as possible. And in the times of internet where you have hyperlinks, and you just click on something, and then you find the source, it's relatively easy. And the responsible reporting should include these hyperlinks and should include an easy accessible link to the original source.

If an article in social media or in the internet or on a webpage reports about 20 pounds weight loss per week but does not have any hyperlink to a source where do

these data come from, then it's, of course, immediately suspicious. I would say click it away. You cannot believe it because you cannot double-check it.

**Annalies Corbin:**

Move on to finding an actual realistic weekly weight loss statistic that's got empirical data behind it. And I think that that's a really, really valuable piece, right? And we can, in fact, teach students that skill, that deep research-based skill. And I think that maybe that is one of the things for many, many years. And you and I are old enough and probably not fair that I call out my guest saying, "Hey, you're old enough," but you and I are old enough, right? We remember the days of going into the library, using those library cards to research the topic we were interested in in that card catalog, and then going to an encyclopedia, and then from an old-school encyclopedia that always had the sources in them, right? We could go and we could find the other books and the resources and, and do the work.

It's simpler because so much stuff is online now, but we can still teach the skill of asking, "Is this real? How do I know this? What's the original source?" We can teach our students to dig and to dig deep. And we should if we really, back to one of the very first things you said in our conversation today, we're talking about the building of fully formed global citizens, people who are informed, who ask questions, right? Those are skills that we need to be teaching in school.

**Manfred Paul Stapff:**

Yeah. And the library example is excellent. I mean, both of us, uh, I don't think you are old enough, but I am old enough.

**Annalies Corbin:**

I am definitely old enough, Manfred, but thank you.

**Manfred Paul Stapff:**

Let's look at the statistics and the data and at, at the year of your birth, so then we can always look at the source. Show me your passport. So, anyway, yeah, we are old enough to know and to remember how we worked when we were in university, did a thesis or wrote some article. And we went from library to library, from book to book to get our sources, and we collected the sources. And some sources, we could believe. Some other sources we could not believe. And then, we looked for the source of the source. And this is a nice analogy what artificial intelligence can now help us. It helps us. We do not have to go to the library anymore. We can sit in front of the computer.

So, we get the collection of information and what artificial intelligence or what ChatGPT is doing. The ChatGPT goes through all the libraries electronically of the

world. And what took us a month, ChatGPT does it perhaps in one second and spits out all this information. But then, it's on us, then it's on humans to decide, is this an information which I believe? Do I take this source, or do I not take this source? And if I have three contradicting information or contradicting books or contradicting articles in the library, then it's on us to make a decision which one to believe, or how is the compromise between these three different, uh, sources which we get.

So, the library, compressing the library activity from one month searching physically, going into this one, going into that one, going into that one, compressing this into one second is a very good analogy for the use of artificial intelligence. So, you're collecting stuff, but the decision is done by the human person, by the human. And of course, AI can only find what's out there.

**Annalies Corbin:**

Exactly. It can only spit out what it has access to, right? And there's a lot of stuff, and this will change as well, right? There's an awful lot of material that is still not accessible to AI.

**Manfred Paul Stapff:**

It's selective.

**Annalies Corbin:**

Exactly.

**Manfred Paul Stapff:**

Yeah.

**Annalies Corbin:**

And it is a tool. It's no different than the internet or your telephone. It is a tool, right? And as long as we keep in mind that it's a tool, it's a powerful tool, but it's still a tool. And I love and appreciate very much your point that at the end of the day, it's the human that has to decide how to use it, what to think about it, what the interpretation is, and to internalize it for themselves and say, "This is what I believe. This is what I stand for. This is what I am going to put out into the world."

**Manfred Paul Stapff:**

Exactly. And when we went to libraries 30-40 years ago, we chose reliable university libraries. What ChatGPT is looking, they look everywhere.

**Annalies Corbin:**

Everywhere, yeah.

**Manfred Paul Stapff:**

It could be totally distorted, or what we say in science, biased, if you have information only from one side. Or if you go only in libraries which are, let's say, in a community center of a sports club, then of course you find a lot about baseball, you find a lot about football. You may not find a lot of information about politics or health or whatever. Nothing against community libraries, but it is about what people are interested in.

So, if your main information is biased towards a certain topic – sports or health or cooking – then you find information about cooking, and the result is basically biased into one certain direction. And this can also be politically biased, which is certainly a little bit more risky one rather than if the information you get is baseball biased.

Another analogy which I sometimes use is not the analogy of library, but the analogy of friends. Very often, you stand together in a small talk or in a cocktail bar and you start a conversation and you ask, "Did you know this? Did you know that? Have you heard about that?" That's basically a casual conversation which you also can have with ChatGPT. Have you ever heard that you can lose 20 pounds in one week? Then, ChatGPT will answer. But if you say this in a cocktail meeting to your friends or so and say, "Hey, does anybody know of you? Can one really lose 20 pounds in one week?"

Then, people will say something based on their experience. A few of these people may already a little bit tipsy and may tell you some \*\*\* sorry, my language. And then it's on you who you believe. You believe this guy because this guy always is right. You don't believe the other guy because this other guy is always telling you some weird stuff. You don't believe that guy because that guy is already tipsy and does not know what he's talking anymore.

So, this is how you use ChatGPT. You get information, you get a lot of information, and you, as the user, decide whether you believe it or what you make out of it as if you were a participant in a alcohol-loaded party where you cannot believe every person anymore, then it's on you whether you believe something.

And in order to be able to believe these things or to decide who to believe, of course, you have to have a good education, you have to have a good basic knowledge, also, you have to have a good instinct, and you have to know about the principles. Yes, go back to the source. What are reliable sources? What are reliable authors? What are journalistic rules of correctly reporting facts?

So, that's what I said in the beginning, the responsibility of correct information shifts more and more to the receiver of this information. We are not passive consumer of

information anymore because we cannot believe anymore everything what's out there.

**Annalies Corbin:**

It's very true. And perfect spot for us to wrap up our conversation. Manfred, thank you so much for taking time out of your day to chat with us. And I really, really appreciate the opportunity to sort of dig into this idea of how do we help our learners figure out what's real and what's not real, loaded with amazing examples and insights. Thank you so much for the work that you're doing and for caring so deeply about what's real and what's not, and how people figure it out. That's one of the things I love about the chance to have conversations with you. So, thank you for joining us today.

**Manfred Paul Stapff:**

Thank you very much for having me. I really enjoyed it. The time ran so fast. There would be so many other things to talk about. But if someone is really interested, there's a book out there, and the book is called Real-World Evidence Unveiled: Navigating the Maze of Modern Misinformation. And you can find in this book many, many other stories and many other examples and analogies, which we unfortunately did not have the time today to discuss. But if you're really deeper interested, look at Amazon and get the book.

**Annalies Corbin:**

And we will have the link to the book in the show notes. And I do encourage our listeners, if you want to hear more about Dr. Stapff's work, please pick up a copy at your earliest convenience. So again, thank you so much for joining us today.

**Manfred Paul Stapff:**

Thank you.

-----

**Annalies Corbin:**

Thank you for joining us for Learning Unboxed, a conversation about teaching, learning, and the future of work. I want to thank my guests and encourage you all to be part of the conversation. Meet me on social media, @AnnaliesCorbin, and join me next time as we stand up, step back, and lean in to reimagine education.