

Transcript of the 3rd Brainstorming Session - July 3rd, 2024

So here on the screen I put what [omitted for review] said, like putting a little doll and the child clicking according to what the professional was saying, on the nose, on the foot, on the knee, on the hand, on the ear, and so on. I think there is not much to intervene here, it can continue like this, right?

It's just a minute, okay, [omitted for review]? I just found yours boring, right? I always say... It's important to talk, [omitted for review]. Your presence here is essential, because in fact [omitted for review] put a click here and we have to adapt, because the original test is to name the parts of the body, right? So, tell us your suggestion, [omitted for review].

So, no, just to let you know, it's like this, it's going to be one by one, right? Like, the nose, then the child, and it's going to be, the professional will speak or it's going to be, because there's also that option of the voice, right? Of someone speaking, nose. And then it's going to be nose, then the child will go, click on the nose and how, then the program will know if it's right? No, the professional will mark it, right? If it's right or wrong. Just step by step, how will it be, look? The professional says, nose, then the child goes there and points to the nose. Then the professional marks it, right? Yeah. So, just to really, then maybe you have to put the instruction, right? For the professional. Say the name of the body parts and check, of each body part and check if the child can point properly, right? Because then you have to have the score for each one.

If the program itself can score points, even better, right? I don't know if it reaches that level of sophistication, but... I don't know, I'm a beginner in this, especially in program development, like that. I think [omitted for review] will know more about whether it's possible to do this or not. Like, "ah, according to the step it's at, the child clicked on such and such a place and now knows whether it was right or wrong."

I think we can do it, but we still need to study it. But I think we can do it.

Yes, the prototype could be simpler too, right? Now, I wanted to suggest something, I don't know if [omitted for review] agrees with me, because times have changed, but generally speaking, when you take a child, the boy identifies more with a boy doll and the girl with a girl. So, ideally, if it were a man or a woman, you would put a boy doll if it was a boy and a boy doll if it was a girl. Right, [omitted for review], psychologist? Does that make sense or not?

Yes, yes, but in this case it's quite easy, because it's just body parts, so maybe it's not that complicated, because it's not really asking for identification, right? So, I think it's easier. So, with so many little boy dolls, I don't think there's much of a problem there. That's usually it, a question of representing a boy's body, identifying more of the boy and girl more of the boy. But those parts of the body there are very calm, right? Nose, foot, hand, ear, right?

I'm talking more about identification, like, in the sense, not of gender identification, but like, he's more empathetic, right? And he's more motivated when he identifies with his own sex, right?

Yes, of course, but then we would have to have maybe, I don't know, two types of the test to show the boy and the girl, is that it? Would that be possible?

That's right, that's it. Then maybe we would filter it at the moment when he says, right, if he identifies as a boy or a girl. Then if he says he identifies as a girl, then we would filter it to fall into that little girl. If he says he identifies as a boy, then we would filter it to fall into the little boy in this part here. So, that issue of gender identification, we would have to keep it in order to be able to do this filter, right, [omitted for review]?

Yes.

But isn't there also, [omitted for review], in the identification, in that first part of identification, name, age, which is filled in by the professional?

That's right, I was going to say that there's an initial space that the professional will have to fill in, right, for you who registers. Date of birth, which the child may say incorrectly. So, we have to fill in the correct identification data, full name, date of birth and gender. The

professional fills it out. The child, that controversial issue, was never controversial, right, but now it is. What have we come to? We're afraid to ask the gender of the child. I never imagined that, but... I don't know. But, I think that now this issue is quite calm. If it's difficult, [omitted for review], I think that since the professional will have to be there, it's the professional himself who marks it, right, that he correctly did the nose, foot, knee, hand, ear, he'll mark it. I don't think the program necessarily needs to score, right, because it's something very simple.

Okay. Cool.

No, just like we said about the others, which would have to have the professional's score, at least in the prototype, right, and then we'll decide if it's possible to automate it, which for now will be digitalized, automating it would already be to generate this automatic score, but we'll feel it later, right, let's first do the prototype with the professional by their side and checking the answers, as [omitted for review] suggested, leaving, right, an option for him to mark what, or a little help, anyway, whether it's right or wrong. I think it looks great.

Yes, agreed.

There you go, on this next screen, right, the child will have to drag, right, like the first figure here, then take the paper to place in the sequence, take the little piece of paper here, then fold it and put it on the floor. The images, from what I researched, there aren't that many things like that on the internet, it was actually hard to get, so we would have to take a photo or something like that, but that's okay too.

The objective, [omitted for review], of this task, is to see if he can obey the command, isn't that right?

Yes, to understand the sentence, triple command, right, so it can't be step by step, you have to say the whole sentence. Take the paper, fold it in half and put it on the floor. To see if the child can understand the sentence and obey the command. That's it, he has to have that, in a certain way, even a short-term memory there, right, because sometimes he takes the paper, folds it in half, what is it supposed to do again? So, he lost part of the information. Then, maybe the program itself could say the complete sentence too. Or the professional says the complete sentence, he can't say like, take the paper, oh, got it, now fold it in half, then put it on the floor, no, it has to be the complete sentence. Only then,

maybe the program could say the complete sentence.

Now, when we write there, put the correct sequence. Is it appropriate for me to put this there, then? This command? I think.

No, I think it should be like this, represent the sentence that was said through figures.

Great, what do you do there? Represent the sentence that was said through the pictures. He's acting it out, look. Then, you can even give him another command, right, put the pictures in the correct order and that's fine. Then he'll know that he's also going to act it out, but in the correct order, okay? You can give him a command, put them in the correct order, but what he has to do is listen to the sentence and reproduce it. And then, what you thought would be to take real photos of the children, right? This is just a representation of little pictures, is that what you thought?

Yes. Yes, it's because, right, when I went to make prototypes below fidelity, I had to resort to artificial intelligence to do it, because there were no photos, nothing of a child putting a piece of paper on the floor or someone, like, picking up a piece of paper, there was none. I had to resort to this, then, because artificial intelligence is not the best way to do this, you can actually see a lot of errors and then the child can make mistakes in this story. So, it would be cool, like, ah, for someone to illustrate or take a picture and show it to the child to understand better. Because, like there are many children with cerebral palsy who won't be able to pick up paper, fold it and put it on the floor, so it would be easier that way.

[omitted for review] has two boys and [omitted for review] has two girls. [omitted for review] can have the girl, [omitted for review] or [omitted for review] can have the boy.

See, easy. We have a sample, the sample is at home.

Easy, guys, that's it.

I was even thinking, maybe the folding in half, that folding is an action, right, maybe it could even be a little video, right, those little videos, just folding the paper. Because I was looking at this little boy and thinking if he is really representing folding, right, maybe it could be a neighbor like that of folding. Yeah.

Like those GIFs, right, [omitted for review]?

Yes yes.

That's it, I think it looks better.

I'm going to film my girl, [omitted for review], and send it to you.

Okay.

Then, you cut the photos, you take them out.

Oh, then that's great.

I think [omitted for review] is already 12 years old, so he's at that stage where he doesn't love me anymore, right? He's already started to not love me because of the teenage shit. Then I have the little one who loves me, who is 4, 5 and 5, the 12-year-old. The one who doesn't love me anymore said, "Oh, mom, it's not possible. You must not be a good psychologist, you have to test me all the time." So I've been asking him, since he was little, to do training with him, I do task training. Then I do the tests, I say, son, come on, I'm going to film you, how do you apply them. Then [omitted for review] says all the time, right, for the love of God, but to this day you have to test things on me, it's not possible.

Invest in [omitted for review] now, then, [omitted for review]. Even this little boy figure for the body part, you can take it, right, always the little girl, the little girl. I don't know, it could be [omitted for review] and [omitted for review], I don't know, two children of about 5 years old, I don't know, just a suggestion.

Okay, these next screens, right, of saying the sentence I heard, I think there's not much mystery here, something, I don't know. Then the program will say what the child will have to repeat, but it's that story, right, there are many who won't be able to say it. So I don't know what to put, like, because this questionnaire, right, this part is for the child to say what they heard, right. I didn't have any other ideas for alternative ways.

Well, there we really have a limitation of the instrument that we can think of. At this moment, in this version, we make a plan B for the non-verbals, right, because it really says

the sentence that you heard. That's right, you're going to say it, okay. But another option would be to, it would really be a completely nonverbal version of the test. And then in this nonverbal version, he would also reproduce this sentence through pictures. The big problem is, the Mini-Mental sentence is a sentence that you can't, neither here, nor there, nor over there, I can't reproduce it through pictures. Only if we thought of an alternative sentence, right. However, in this specific question, guys, my neighbor is playing loud music here, I don't know if you can hear it, can you hear it?

No.

No, don't worry.

And then I start thinking, right, the objective of this, of this item is in fact the verbal question, right. So, because if it's just the ability to understand a sentence, reproduce the command, we already have the previous question, which is already an understanding and execution of a command.

So this question is a verbal item. Maybe for these children who really don't have the conditions, we would have to put a "does not apply" option, right, for the non-verbal ones. I think that's the way to put "does not apply" because it's a non-verbal child, right. And then we have, if I think that for them it's cerebral, cases of non-verbal autistic, right, then there are other issues. I think that this question itself wouldn't have much to change, because otherwise we would change the objective itself.

Oh [omitted for review], I would have to use a sentence, like this, understandable, right, because sometimes the child will, she will speak in a jumbled way. Would she gain something, wouldn't she gain, how would this question that I'm understanding be, right, it's the part of language within cognition, right, that is being evaluated here?

Yes, it is the praxis of speech, we have to see if the child does not have the praxis of speech, which is the brain's ability, right, to send information to the phonological apparatus to emit. So we want to see if the child has the ability to reproduce linguistic speech. However, in cases of children who have dysarthria, right, and they only have a problem, which is common in cases of cerebral palsy, they will speak, but they speak with difficulty, which is having difficulty in the motor skills of speech. But if they speak and it was possible to understand cognitively, it is ok, the difficulty is only in the motor skills of speech. So we

can even make this observation to the experimenter, right, to the researcher who is going to apply it. If it is possible to understand, even with difficulty in articulation, difficulty in articulating speech, the motor skills of speech, it is valid, to validate, because we do not need to have perfect speech. I want to know if she can reproduce speech, even if she speaks in a slightly disjointed way or stuttering, it's ok, for the cognitive part it's ok, I think that's this criterion, right. And here we're not evaluating with the rigor of speech therapy, right, our focus here is a cognitive focus, I think there was understanding, it's valid.

That, I think it's just a matter of including that observation, right, [omitted for review], that [omitted for review] mentioned.

Then the next screen is to draw the figure, right, to make a circle or something like that, I don't know if that's really the test, right, to make just this image, simpler. If it is, it's much easier, but there are many who won't be able to do it, so I don't know if there's any way to adapt it further, if not.

[omitted for review], and you thought of doing it with the touchscreen itself, he uses his little finger and captures it, you don't even need a special pen.

No, you don't even need a pen, you can do it with your finger.

If he has a simple difficulty, he can even do it, right, only if it is very serious, no, which he won't be able to do.

Yes, you can, right? Let's see what the objective of this question is, [omitted for review], cognitively speaking.

Cognitively, there are several, like visualization and spacial ability, the ability to observe a figure and be able to reproduce it, you involve. Planning your action involves, in addition to basic motor coordination, planning, the ability to follow a command, right. And There you go, in fact, we have developments according to age. So, for younger children, there is only one line. For slightly older children, it is the cross, even the circle. I don't know if we will really obey and we will evaluate. We can even include, I'm thinking since we are, right, we will standardize. One thing that would be interesting, for us in this, in this item, we could advance in complexity, instead of allowing, right, asking for only one drawing, we can ask for three drawings, you know, or even more, according to the article, that we have

developments in drawing according to age, you know. I think it would be interesting for us to see how much he, how much the child can produce. On the other hand, the more we ask, the more we are demanding of the motor aspects, which is something we want to get out of this test, right. So, I keep thinking like, oh, if I ask for several drawings, there will be several items that will have a motor demand and what we want is to eliminate the motor demand. So, yes, despite, or maybe, let's leave this one, or just leave two that have the simplest of all, it's just a vertical line, it's the simplest of all, a vertical line. And maybe the child can't reproduce the circle, not because he can't, he has a cognitive activity, right, because what we want to know, the ability to draw, involves constructive praxis, the ability to perceive a figure, follow a command, reproduce through copying, right, and a visual spatial ability. Here at the moment, the constructive practice is very simple, because the practice of drawing is very simple, it hardly involves planning, right, so it's something very simple. The circle, children of 4, 5 years old can do it properly. Children of 3 years old, the vertical line, which is expected, just a vertical line, so maybe we have to have two options at least, right, the vertical line and the circle, which if we are going to apply it to children of 3 years old and older, we have to have the option of the line. Now, the instrument will be made, as it is touch, it will always be on the tablet, so, does it always have to be on the tablet?

So, it's even a question that we had, what platform it will be on, because I first thought about a tablet, which is where most clinics have them, right. Most of the medical clinics that I've been to, at least from my experience, only had tablets, I don't know if it will be for notebooks or cell phones as well.

We had thought about tablets, right, [omitted for review], actually, because we even have the tablets to do the pilot.

This possibility of touching the screen, for those who have difficulty, right, because dealing with a mouse and such is complicated, right. It's easier for children, that's why small children do well on tablets, because they don't have the motor coordination for the mouse, but they use their little fingers, right, which is simpler. We thought about the tablet, yes. Now, [omitted for review], originally, remind me which drawings you ask for?

Vertical line, cross, circle, square and a pentagon, which is like a rhombus, right? Rhombus, pentagon, let's think. Rhombus. I'm going to get it here now, I was even getting the article here, even to show.

Is it all of these? Is it all of these? Not all of them, it depends on age.

OK I understand.

It's for age, I'm even getting it here.

That we can keep according to age. Is it possible to do this, [omitted for review] and [omitted for review], more or less to deal with the child, select the figure?

Yes, it does.

Ah, so it makes things easier. And now we have something that wasn't in the original article, but that we end up doing in the clinic, which is the following. For example, the child couldn't draw a circle, okay? He couldn't, it's wrong. But then you can try a previous one to see if sometimes only the vertical line can be done. I was thinking, we don't include this option. Let me put it here. It will be the vertical line at three years old, a cross at four, a circle at five, a square at six and a diamond at seven. So these drawings here, are taking the age here. Ah, I don't know if we can, for example, if he's seven years old, he couldn't draw the diamond. Let's give him the opportunity, see if he can draw the line. That's what I wanted, perhaps, to have a possibility, to give him an opportunity. Because sometimes he can't draw the diamond, but he can draw a vertical line.

And how would that be in terms of scoring, [omitted for review]?

The score here is just zero or one. Zero can't do it, one can do it. So it's just whether he can do it. So we don't evaluate the food, the evaluation of the food is always very simple, right? Because for example, oh, he evaluated, but he drew the line, but he didn't do it exactly. He made it straight, he made it kind of diagonal, kind of crooked. It's okay, if he had an idea, he tried to do it, what made it difficult was perhaps his fine motor coordination, which may already be compromised for the brain language, we score it as correct. So we'll see if he does it right or wrong. Then the score is for one drawing only. So, he did what we can adapt now. Oh, what is he expected to do at his age? He is expected to make the diamond. He couldn't make the diamond, so it would be zero. But if he manages to make some previous drawing, maybe we could change it and give him a score of half, I don't know, it's a validation. Or simply as a test, no, he can't do it according to the original test, he really can't. So it's zero, it says he can't do what is expected for his age. So I think it's good for us to think about what we really want. If we want to explore the maximum that this child can do, or if we

really want to have an assessment there. Because in the area of mini-mental it's already a very easy instrument, right? I'm wondering if we're going to make it easier to maintain, it's already very easy. So a five-year-old child, making a circle is expected, it's the basics. If he can't make a circle at five years old, he probably has some greater difficulty. It remains to be seen whether this difficulty is due to motor coordination, or if it is due to truly cognitive praxis issues. However, even if it is due to motor coordination, it's important information, right? Look, he has a motor coordination impairment that made it difficult for him to use this task, it will be easier. And it will be exactly the way you thought, leave it to the side, not to go over it. There is a model there and it does it right there to the side, isn't that right?

Yes, another thing I also thought of for people who can't do it because they don't have much motor coordination, is to leave a picture of a circle there and put other figures. They press on what the circle is, I don't know if I could do that too, it would also be a possibility.

But then the task changes a lot, it would just be reflecting, right?

That way, he doesn't really have to recruit planning, a mental image of the figure. So, that changes a lot, just reflecting. We're already making it easier for several tasks, but this one will make it much easier by making the screen, right? Now, I think that maybe the evaluator will have to judge whether it's right or wrong. Because, I know if I'm right or wrong, but the machine with programming will be something more objective, right? A pattern there, you won't see. Oh, he did it crooked. Yeah, he did it a little crooked, but it's ok, then he tried to make the circle, it's just a little crooked. I think the computer, the program, the special intelligence, I don't know, they don't know how to see this more qualitative level of detail. I think that the examiner will have to show whether it was right or wrong.

Yes, sorry, but I'm just enthusiastic about these topics. There are studies today on elderly people with dementia so that artificial intelligence can map the drawings they make. To know the levels, right? And nowadays there's Duolingo, when you're going to do, like, Japanese, kanji there. It has to be very accurate, so what we can do is map it using little squares. And for each little square that occupies the line, we'll know the percentage, for example, of how much was more assertive, right? The user was more assertive.

Hey, we're really going to be replaced by machines. If you want to do better than us, that's it, that's it. Hey, if that's possible?

There's even a game I remember where you have to make a perfect circle, and then people show the percentage of how much of a perfect circle they made. Sometimes it's a perfect circle that we can see, but it's just one pixel away from being perfect, and people get intrigued by that.

Wow, I'm going to leave this meeting today using it as a conflict in an existential crisis, okay? It made me feel bad now. Now I'm worried about the future of humanity.

The problem is that we can't be so strict about not having our children do the treatment.

Okay, what we can do is, if it was 10% or more, then it's already passed. If it was 10% or less, then it won't pass. Then we would have to take an example, right, and take pictures of figures and put them there, and then our program sees if it really is like, what percentage it configured correctly, and then implement it.

We can see where...

I think we need to do it, like, I think we need to do a pilot with this to get an idea. Because what happens a lot is that they do everything wrong. So We don't have much... it's very difficult for us to predict. You know that you're going to be a little crooked there, but she intended to make the cycle, so it's correct. She tried to make the cycle, it's kind of oval. Do you understand? That's the issue. It's very difficult for us to predict the patterns. Maybe what we can do, I don't know if it makes sense, okay? But do a pilot, like, with about 10 children, 15 children, and from these results establish that cycle produced by the children as possible and adequate models, so we can have an idea of how the children produce, right? Or even take instruments that we already, right, we already have several mini mental cycles that the children have already made, to establish patterns based on their drawings. Because otherwise we'll make an ideal pattern that is far from reality, right?

[omitted for review], I'm remembering that Denver has, right, in the manual, more or less, showing what is accepted, what is not? Because Denver is also a standardized instrument that looks at this fine motor issue. The focus is on fine motor skills at this point. But then there's the circle, the child has to draw the cycle. Then if the cycle is open, it doesn't pass. But if it did, it would even have the drawings so we can see what passes and what doesn't. We can use an instrument that we already have as a criterion, right? So, what we consider to pass, doesn't pass. I'm just afraid of that, of being too strict, right? The machine being

too strict, right?

Yes, it doesn't give us any idea, to do a pilot and see if it's functional or not. And really, our analysis is qualitative, right? We observe, you're a little shaky, but for our purpose it's adequate. She took the time to make the circle. It's shaky due to the issue of fine motor standardization. So, I think that mainly the cycle will give more... No, but in the line itself, you can make a slightly crooked line.

Denver has this too. If it goes over 45 degrees, it's not allowed. But if it goes up to 45 degrees, it's tolerable. So, suddenly, initially in this prototype, we do the qualitative and then we see, right? We do the pilot, we see the children's drawing and we also see what the criteria are. We're going to establish whether it's possible to include these criteria in the machine, which are somewhat qualitative, right? Now, I just want to understand [omitted for review]'s proposal, which I found interesting. Like, what you're not actually seeing here, you're seeing the planning, right? And not the fine motor coordination. So, it's seven years of waiting for the angles, but sometimes she can't have fine motor skills. So, if she makes a previous drawing, it's an easier drawing from a fine motor point of view, from a cognitive point of view, it has the same requirement, than a more complex figure would that be? So, complex yes, right? They're all simple figures. Is that it, [omitted for review]? And that's why there's a more...

No, in reality I'm also thinking cognitively in a simpler way. For example, the rhombus cognitively demands more than the circle. So, sometimes he has a difficulty that he couldn't manage to make the rhombus, right? And that involves more planning, but he can make the circle. So, what does this remind us of, what does this mean? That he has a planning activity, perhaps a visual spatial activity, that is outside of what is expected for his age, so maybe he doesn't have the maturity according to a seven-year-old child, but for a five-year-old child he can do it. Even though he has a chronological age of seven, the drawing he can do, he was able to do it like a five-year-old child. What would that be? Instead of us giving simply zero, it would be zero, right? He didn't do the zero, he can't perform the task, well. We would give him an intermediate. He can't perform, as if it were below average, we would have something like this, instead of being in accordance with the average above average, he would have below average. He has difficulty performing the task, or he performs below the expected age. So, we would put this, because he would have a slightly lower score, and then I thought of the middle, right? So, instead of him having zero, he would have the middle, if he can. The half point, which indicates that he hasn't yet reached the appropriate level for

his age, but it also doesn't mean that he couldn't do anything. It's an attempt, right? So, I also think it would be something new for us to test in a pilot. Since we're going to validate, validate with this option as well. Test whether it will work or not.

Interesting.

And then, like, when you finish the test, you come to the final table, right? But we had some doubts here. Like, you're going to include written language, repetition and reading. At the beginning of the meetings, [omitted for review] showed us a slide of what was adapted for children, right? And then I realized that there was no written language, no reading and no repetition. So I was in doubt whether or not to include it too.

The repetition, [omitted for review], was that the one we talked about just now? Did you just introduce it to us?

Oh, so that was a misinterpretation of mine. Of the phrase "neither here nor there"? That's the repetition task.

Ah, so it was a misinterpretation. So that's it, then this screen appears that will finalize everything, the score.

Wasn't written language about writing your own name in the original test? Because written language, for me, was about writing your name. And reading, [omitted for review], was a task of reading and asking what you're doing, right? He had to read and do what you're asking.

Oh, so, calm down there.

But wait, let's see, then [omitted for review] can...

So that's it. Reading is when I close my eyes, so I have to read and close my eyes. I read and do what it asks. And before that I write my own name. And then what are the questions? The questions are, illiterate children, they can't do the reading. But this test will also be applied to literate children, right? So I think we have to keep the option. We already know that the point of children under 5 years of age, they really, the average is lower, right? They won't do it. And I think that's it, let me close my eyes and the child just does it. It's

a task. It hardly requires any motor skills, right? It's quite easy. And writing is that we can also maybe ask them to type. It requires less than writing, right? Because if it's not typed, they write with the pen on the tablet, right? There's also that option. But it requires a lot of fine motor coordination. And typing is easier.

But that has already been evaluated, hasn't it, [omitted for review]? At the beginning we don't ask him what his name is, has he already typed it? Exactly, exactly. In fact, he will have already written it. So maybe this sentence, if you want to use written language, could actually be a saying, a word, a phrase, if not his own name, right? Then you would have to talk to him, because he will have already typed his name.

But in the original it is the name, isn't it?

Yes, but that's because in the original we do it verbally. In the original we ask the person, in the first question, what's your name? Then they say it. In this one, since we have the non-verbal option, what's your name, the person who doesn't speak will already type their name. We gave the option of what their name is for the person to type. And then we'll ask them to type their name again, if they already typed it at the beginning of the test. That's the problem.

Couldn't you score points on both? Like, you lose points or gain points on both, right?

Because we will have typed other things too, like state, city, we will ask him to type other things, we will be evaluating this in him.

Yes, but we decided to change the state of the city right away, didn't we? That's another thing, we're going to have to go back. Because it won't be typing, it'll just be the figure, the word, to take some of the paper out of the engine. No, I think we have to think about what the objective is. I think writing your own name, seeing what you're evaluating. You evaluate whether the person memorized their own name for writing. That's something I'm already doing, a critique of the original instrument itself. So, you evaluate whether the person memorized their own name and knows how to write. The person who writes their own name doesn't necessarily know how to write, they don't necessarily have to use it. They just memorized their own name. So, another point, if we wanted to take advantage and really evaluate the writing, then we would have to ask them to write a sentence, right? Dictate a sentence for them to write. And then we would evaluate their writing better than the original

instrument, because the original instrument has this limitation. When asked to write the child's own name, the child doesn't know anything, but she has memorized how to write her name.

I agree, but...

Sorry, [omitted for review], look, because this way, she will actually be typing. If written language wouldn't be good, for example, a simple word, since she will use the touchscreen, say, for example, a word "ball" or a word "love", today we have the digital signature and she says "write" with a little finger. And we evaluate this, the writing itself? And not to be different? So the simple word, two syllables, we can think about looking at other instruments, or "ball" or "love" and she comes there on the little screen writing on the screen.

You can, you can, you can...

Type it, no. Or type it, because, like, what I understand that [omitted for review] is saying, that the name really, the child sometimes memorizes how to write the name, but not necessarily knows, he memorized that letter there. But if you say another simple word to him, instead of a sentence, because I think a sentence is complex. But like "house", "ball", just like we said, but for her to type too, right? I think we could take advantage and give her three words to write this, instead of some "why". What happens, guys, reading is a complex process, we use two routes to write, the phonological route and the lexical route. The phonological route is that you always write by the language and sound. So, for example, even if you don't know just the word, when we do a reading and writing test, I ask the person, the child, to write a pseudo word. So I ask them to write, for example, the word "gile", that word doesn't exist. But everyone knows how to write, those who are literate and don't have dyslexia know how to write "gile". Because even if you didn't hear it, you go by the sound and write. Oh, you're going to write with "j" or "g", that's fine. But you go by the process of reading and sound. Some words, even if you are not literate, you have already memorized and written, are high-frequency words. "Ball", "house", "doll", children also often write them because they have memorized them. So we could try one of these high-frequency words. A high-frequency word like "ball". An irregular word, "boxing". And see how to write, you depend on rules, on memorization, I don't know. Why is an irregular word important? Because fluent reading involves you glancing at the words and memorizing them. You glancing at them and you don't... Our reading today, we don't decode letter by letter, sound by sound. We glancing at them and already guess the word. That's why we

read a text quickly. And we already have this visual reading. So it's cool to see if they also think and this writing, more like they work with it. Of course, if we do this, we are greatly increasing the level of complexity of this issue. I am no longer just looking at whether she knows how to write a little word like this. I'm taking advantage of this and seeing that, in fact, she doesn't have any difficulties with writing. She has five signs and has some difficulty with writing. But there's also this. "Ah, but the objective of the test is changing a little bit." In fact, it's already changing. It would be to go into a little more depth. But if we want to keep this... Oh no, but if we don't just keep the same screening tool, maybe the high-frequency words that the child would already have, maybe they've already memorized. But "ball" and "house" are high-frequency words that the child has certainly already memorized.

Sorry to interrupt, but I was thinking about what if we do the same thing as with the geometric figures? We ask for a high-frequency one, a more difficult, more complex one. If the child can't do it, they can make a house, for example. Yes. Thinking about the objective you mentioned, which is whether the child really knows how to write. If the person knows how to write, thinking about the mini mental in general. But I usually ask them to write a name, right? Yes. But trying to minimize this bias.

Yes. I think maybe just... Writing three words, do you think it's too complex? I think three words are really quick to write. We take three words from a test, we write them with validation, so that people can understand. We need complex words, it could be like "bola", "empada", which is also another word that involves a bit of spelling and a non-word. "gile", three words. I don't think it's that complex, no, because they may have motor issues. Or maybe you can give them two options, write on the screen or type. Of the two options. Just three little words and they write really quickly.

I think we have to go and see the pilot, maybe leave it and see the pilot. Because sometimes a child has motor difficulties and is already doing other things that will require this. also, and at the end of the test do three, maybe. But I think it has to go through the pilot, right? So we know.

Yes. And then we would really evaluate how many children she writes. Of course, we are not doing anything in-depth, but we can see that she really knows how to write. She didn't just memorize her name. I think that, of course, we are making it a little more complex. We are making it a little more reliable, a little more trustworthy. And then there is the justification, right? I would take it. Because there is, right, the researchers. There is already

a list of high- frequency, low-frequency, regular, irregular, pseudo-words that people already have. We would take a word, just three words, one of each, one regular, one irregular and one non- word. Three words, we don't think, three small words. I think it's worth testing.

And the punctuation, [omitted for review]? Because in the original it is 0 or 1. Here we enter the name, here we will have three words.

Yes. I think it would, because we would be giving more weight to this one, right? To this word, to this question in relation to the others. That's the problem. We would give more weight to this question to the detriment of the other questions. In other words, if we give three points, it would have a greater weight in the test. If we only give one, we would only give points if the child actually answered all three correctly.

And what if we put, [omitted for review], for example, just an irregular word? Because it is less common for him to have memorized it. It is not a pseudo word that will generate so many doubts for him. And it achieves the objective of written language and we do not stray so far from the original, right?

The problem with irregular words, just irregular words, is that they depend on rules. Sometimes he really hasn't memorized those rules. Or he has a lexical problem. He's good at transparent reading, what we say, right? Simple written reading, memorizing in one phoneme. But when it comes to memorizing the lexical rule, he's at a disadvantage. So we can maybe simplify it. Just do it. It won't be as sensitive for reading. But at least the fugitive part, ok, put a simple high-frequency word there.

But here it doesn't have to be a disyllabic word, for example. We take a high-frequency word, a trisyllable word. Which is already a little more difficult for boys who will have this difficulty just through the semantic route. So you take a three-syllable word, for example. Instead of being a ball, it's something more complex. And we don't stray too far from the original, at least for the pilot.

Okay. Yeah, I think it could be. I would pick a word, I'll see, because then, it has to be thought about. The word itself is not good, because there are phonological texts with V, many children have V and R interchanged. So I'll look at the list of words in the texts, from word to word, but it could be a little better. If it's not so easy to remember, so why bother, right? And it also doesn't depend on rules, on spelling, right?

. It's like boy, girl, I don't know, right? Something like that. Now I thought this was perhaps interesting. Maybe I'll put a more complicated word and go back to a simpler one, like we did in the drawing. Because you have to think, [omitted for review], that we're going to do the drawing later. validation of it with the original, right? So for this item we need to have something that matches, right? Because this won't be more difficult than the original.

And truth, but I think, for example, if he gets a complex word, he gets one. If he gets a complex word, not one of those, you are using the term there, which uses less. And if it is a common word, like house, he gets half. When doing the validation, we use the simplest word.

The question we ask is that sometimes the child may have difficulty with just one route, right? Sometimes like, "ah, he has to relate the lexical route, but he doesn't..." I'm going to think about the phonological part, because if he knows just the letter, I won't get complex. Because that's the basics of writing, just the letter. Because if it doesn't involve other components, it can get more complicated. I was thinking, that's what I think is best, isn't the objective of the test, right? The depth, the writing, the reading. The objective is cognitive screening, but... he only knows how to write a word that is only through the phonological route. He'll only be able to write in sound letters, right? In this word. But ball is very, very easy to memorize, right? You have to think, look at this word. It can't be football, because the sound of L in football is the sound of U. So it can't, because if the child writes with U, how would that be? So it has to be a very transparent word. Letter, very clear sound. Like ball, right? Doll, doll. Very transparent words, which leave no doubt about the sound. So the ball is only for writing a word. Then this word will be said by the program or by the examiner?

We can put it, now that it's a pilot like this, we can do it for the examiner, right? But we can also put a speaker in the program and then the child presses it to listen. And then if he wants to listen again, I don't know if he can, then he presses it again to listen too.

Speaking of this, we have to standardize, right? Because at other times there is also this possibility of the program speaking or the person speaking. So I think that later it becomes standardized with everything. Now, whether or not you can repeat something, [omitted for review] doesn't want to be able to say, if you can repeat the word.

Then you can repeat it, I don't think there's a problem, right? Because the person wants to know if the child knows how to write the word. They don't see any demand for memory

or comprehension, just that the child knows how to write. So it's quite easy.

[omitted for review], maybe in the pilot, so we can already test this prototype, right? We do it with the evaluator and in a more elaborate version, see what is possible, leave the sound there to click at the time.

Yes, now in the prototype it's very simple. So it's going to be like what you saw on the screen, but with the design applied, right? And what the examiner will really need to say, right? But when everything is ready, it's really going to be something more... The program will say it and I don't know how to explain it, everything will be more molded like this, you know?

Yes, but we already do the first tests of the prototype, give this feedback so we can make this decision.

Yes.

But it turned out really well, [omitted for review]. Congratulations on your work and your investment. And the contributions there were great, right? It's great that [omitted for review] joined us, she was there, right?

Do you have any questions, [omitted for review]? Do you have any questions, [omitted for review], do you have anything you want to ask?

No, that's all