

## Evaluation Transcript: Participant 4

*The evaluation was conducted virtually on 20.03.2023 from 18:00-19:30. One expert (E) and the study director (L) took part.*

*This is a transcript of the audio recording of the interview, which will be made available to all participants of the interview. The transcript is subject to the conditions of the previously signed consent form. This transcript has been completely anonymized. The recording was started at the beginning of the "Think Aloud" process. Prior to this, the study participant (E) completed a training phase in which he/she was able to test the prototype.*

***This evaluation was originally conducted in German. Unnatural English formulations can be attributed to that fact.***

**SL:** I would ask you to start with the tasks and just say everything out loud.

**E:** All right. Let's start with the tasks. The first would be general and visualization. Task A: Download the choreography with the name "Evaluation choreography". It is located in the "Downloads" folder. It is not there. I press the "Load" button, "Upload". It is not in the downloads, because I put it on my desktop ... where I can't find it now. "Desktop". That's where the JSON file is. I tap on "Load" and expect to see the file at the bottom. That's what it looks like. There are now 24 patterns and no longer the standard "Crazy Fire" choreography. It also says "Evaluation choreography" at the top and that's good. That would be task A.

**Task B:** What is your current view on the choreography? Explain the content of the visualization in your own words. I see a 3D view. I am currently in the "3D" menu. This is also currently selected and I'm obviously in edit mode, which is also indicated by this little pencil. That would be task B.

**Point C:** At which position is the lady with the number 8 in pattern 0 and with which part of her body is she standing this position? I should probably go to pattern 0 first. That's here. I'll also leave the 3D view so that I can see the numbers. The lady with number 8. Now the first problem is that I don't know what ladies and what gentlemen are. You would have to click on the selection here and I still can't see who the lady is. Aha, so the lady seems to be red. I can see that here now ... I only found out by moving it. Slight detour. There were "ladies" and then I changed the position. So, the red ones are probably the ladies and since all the dancers here in the "Remarks" are standing with their right foot on the position, that should also apply to the lady if that's the definition up here. That would be task C.

**Task D:** At which position in the one the screen would a coach be standing if he is in front of the dancers? In this case it would be up here. That's what this little triangle shows me. The standard rotation is the default setting in the edit mode, but not in the "View" mode. The default view for me as a coach would be the following, that I would be down here. That would be task D.

Analyzing the choreography is the next section. **Task E:** In which position are dancers most often found during the choreography? This should be visible in the analysis tab. And I think that's probably this position here. That seems to be the density, or the frequency with which the positions are occupied. The middle area and the position here, i.e. 2 and 4.5.

**Point F:** Which parts of the dance floor are used particularly often, and which are not? That sounds kind of similar. In which position are the dancers most often during the choreography? Which parts of

the dance floor are used particularly often, and which are not? Sounds like the same question to me. Or have I overlooked something? No. It's the same for me.

G: Find the lady or gentleman with the lowest movement distance during the entire choreography. You can see this here for the couple. That would be Couple 5 with 48.5 meters. Yes, can you change that for men and women individually? I don't know. I wouldn't know that from here. No, I can't find it out for men and women individually.

Edit choreography is the next task. Task H: Create a new pattern for the choreography, which should contain a rectangle. Arrange the pattern in the center as best you can. So first create a new pattern. You have to toggle the "Edit" button at the top here. Then I can leave the "Analysis". I'm currently looking at pattern 0. If I just add one, the new pattern should ... does it have a name? No, it doesn't need a name, so I'll just call it "Test". I could choose a standard pattern or a ... yes, a standard pattern already gives me a "Rectangle", i.e. a rectangle. Let's use that then. That should be inserted at the end. Why can't you jump there? Okay. I would probably have understood "rectangle" to mean something else. Never mind. Good. To arrange this particularly centrally ... I select all the dancers with the mouse. The funny thing is, ok, if I deselect ... the green is hard to see. The first selected point irritates me. I always thought it wasn't selected. But since it's the first selected point, it's relatively hard to see on my monitor. To place it in the middle, I would really like to have a keyboard control. It's kind of difficult with the mouse. The selection is also difficult.

SL: I have to intervene briefly, sorry. You've actually found a bug in the program. Can you switch to view mode for a moment?

E: Yes, and back again?

SL: Somehow the pattern didn't rotate correctly again. I don't know why either. But thanks for finding it. I'll make a note of it right away.

E: Ok. Since you can't center it ... If you mark them and always jump half a meter. You would need ... Can you change that?

SL: Keep talking.

E: Yes, I'm trying to align them in the center. But that doesn't work if I mark them all, because the grid is too coarse. That doesn't work. We have chosen the distances here in such a way that we would need a grid of 0.25 meters, which does not exist. The task was: Create a new pattern containing a rectangle and arrange the pattern in the center as best you can. You would have to change the rectangle or you would need a different grid. Um, we can change the rectangle ... we have meter distances. But it's very limited, because meters and half meters aren't enough if you have odd parts, like in the standard pattern. You would at least need a grid that includes 0.25 and 0.33 meters. Well, that's aligned.

Now change the choreography so that the newly created pattern is located in the first beat of bar 36. Ok, that's a new task that I don't know. Then you would have to move the pattern and I wouldn't even know how to do that. Erm ... bars are also very strange [participant reads question through again quietly]. If these are the bars that are counted at the bottom, then that would be here. I would like to move that. I can't do that. I would like to edit that. Move maybe not in edit mode? No, that doesn't matter. Nope, I wouldn't know how to do that right away. But I wouldn't know why I would want to do that either. So here you can set it with "New bar" and "New beat". Yes, funny, because normally I wouldn't place patterns on bars and such. Because patterns don't usually match beats either. Yeah, weird function for me, I guess. Well, that would be task I.

Point J: Add another pattern with a rectangle in which the rearmost row of dancers represents a diagonal falling 45 degrees from left to right. You could duplicate this pattern and insert it again. Here I have the old one and here the new one. The old one with "Previous" and the new one here. I select the line and now I can do what? I can rotate it. By 45 degrees. What? "Please select a single line of dancers". I have. Where the leftmost dancer is the rotation center. I try to rotate it, first setting it to -45. The task was to create a falling diagonal from left to right ... and then we place it somewhere behind it. It doesn't matter where it is now. I think this is a diagonal falling by 45 degrees from left to right.

Orientation of the dancers. K: In which direction are the ladies in pattern 8 facing? You can select pattern 8 directly here. Then I go to "Orientations". Then the ladies are probably still the red ones and they looking to the right. Not from my viewpoint, but from the dancer's one. I'd have to rotate again for that, because I want to see it from my point of view and she's looking to the left.

Point I: Are the ladies in this pattern facing the men with their bodies or not? No, they are not. They are looking outwards ... er, with the body outwards. These are the areas marked, as I understood it in the video.

Look at pattern 2 and align the ladies so that they are facing the men. pattern 2: Align the ladies so that they are facing the men. Then let's take the ladies. I can do that again in the edit mode ... why does the rotation change when I change the ... that's not nice. I would also like to be able to rotate the pattern in edit mode. That's irritating. Now I can rotate the ladies by ... no, no, no ... by going to "Positions". That's really interesting, because I'm looking for the point where I can rotate them with the mouse. That's not going to be there. If I click on it, there is "Body orientation", there I can change it, ok. "Apply for ladies" and those are the 4 marked ones. That is also displayed, I understand that.

Then click on it again and change the orientation. And the heads are turned. That's also funny, because they should also look at the men. This means that the head has to be turned separately. Very good. Ok, with "Apply" it only does it for the selected one. What happens if I select more than one and one of them is already looking the wrong way? That shouldn't matter. Then I do the "Apply for ladies". So, that was the orientation. [Participant reads through the task again quietly]. That should be finished.

3D mode and poses next. Task N: What poses have the ladies in pattern 3 taken? Then we go to pattern 3, enter the 3D-View and take a look at the poses. The women are turned towards the men. They are looking towards the men and have their left hands raised.

Task O: Now make sure that in the same pattern all the gentlemen raise their left arm. I expect that you could actually select it here too. That would be cool. But I can't, so I have to select the "gentleman" here. Can I do that? Nothing happens. Can I select more than one with the command button? No, that doesn't work either. That's the question now ... Multiple selection doesn't work on the Mac? Not always. So, the shift key on the Mac and multiple selection doesn't work. Here I can't see what is selected. What happens if I simply rotate the arm? That's what I'm trying to do here. Very nice. That's strange, because "Selected Dancer" is not selected, because I had selected dancers, and I was expecting to be able to select the individual dancers here. But somehow it doesn't work, or I didn't get it right. But that's how it works. I can obviously change it here on the mannequin first and then select it individually for all dancers or for all ladies and gentlemen. Ok, got it.

Transitions. P: Find a potential collision between 2 dancers in the choreography and explain why this is a collision. Ok. "Transitions" is probably the area here. The good question is: Do I have to go through all the patterns individually to find transitions? It looks as if it is a transition. Whether this is a potential collision would actually have to be seen over time. Because you don't know exactly whether

it would lead to a collision at this exact position here. If it is a ... no, I don't know. I don't think you can see that here. The question is: Is there an overview in which basic, dangerous transitions are displayed? In other words, as a complete analysis? There is only "Distance". There are only positions here. I think I'll go through the patterns again. Let's see if I can find anything else that is potentially dangerous. That looks dangerous. Yes, always where the lines cross. But it's really difficult to tell in terms of timing, because the speeds certainly won't be the same in a choreography when you change positions. And I doubt that you can get it so fine-granular if you insert these intermediate points in the time sequences. So, it's very difficult to say. Yes, difficult.

Let's continue with task Q: In the transition from pattern 19 to 20, change the path of pair 3 so that it no longer collides with pair 7. Then let's look at pattern 19. pattern 19 to pattern 20. Wow. Okay. But why? 1, 4, 6 and 2. Which pair, 7, collides with ... ah, 7 with 3. Because it goes from 5, 8, 7, 3 to ... yeah, ok. What? I'm trying to select that. I can't do that with the transitions. Do I have to go out of the ... yes, I have to leave the current mode and move it ... The only question is: Do you want this position to be at the front? So, 3 no longer collides with 7, but 7 collides with 5, which doesn't matter. The task is probably solved. As already said: We'll leave it at that.

Now animate this transition. I think you have to go to the second pattern for the animation. But I can't remember it exactly. Then I have to click on "Animate" in the view mode. Let's take a look. I don't think that was it. That was also 19 to 20. I'm looking at the wrong pattern. 19 to 20 and then click on "Animate" again. Oh, no. It jumps to 21. So, I have to go to 19 and then press "Animate" and then for a pattern with an animation time of one second ... that's very slow. That's how it works. Good. Now animate this transition. That's it.

And save the choreography. "Load", "Save". That's interesting. "Save" only works in the edit mode. Why is that the case? And save it. It automatically ends up in the download directory. Yes. There is a JSON file in the download directory. Yes.

**SL:** Perfect. You did an excellent job. Um, I need to finish my notes quickly. So ... hopefully you have a lot of feedback for me now that we can discuss in a post-study discussion.

**E:** Yes, exactly.

**SL:** Let me share my screen with you.

**E:** With pleasure.

**SL:** We now have two more things. Firstly, I have 10 statements where I would ask you to indicate on a scale from -2 to 2 how much you agree with the statement. -2 is "I totally all", -1 is "I disagree", 0 is "I neither agree nor disagree" and so on. I would therefore ask you to give me the numerical value for each statement.

**E:** The visualization of pattern from choreographies is intuitive. 1. Positions of individual dancers can be easily read off. Yes, also 1. Do you need free text, or do you just want the number?

**SL:** If you have something specific to say about the current point, then you're welcome to say it, yes.

**E:** So, it would be cool if the coordinates noted near the dancer, because you always have to go to the coordinate system first to see which dancer stands on which meter. And usually you always tell the dancers: Hey, you're on 3.5 and 3. So it would be nice to see the coordinates in the plan right next to the dancer's number. So that he can see at first glance where he has to stand.

**SL:** Yes.

**E:** The visualization of the viewing direction and orientation of the body are simple and intuitive. Hm, -1. It took me a while to understand that. You have to click on it and then rotate them. Apart from that, I don't think anyone has ever made a pattern plan where they note that down completely. At least I don't know anyone. The evaluation of the utilization of the dance floor is simple and intuitive. Yes, I found that quite ok, so 1 to 2.

**SL:** 1 or 2?

**E:** 2.

**SL:** You can also do it somewhere in between.

**E:** No, it fits just fine. The visual detection of collisions helps in the creation of choreographies. -1.

**SL:** Yes.

**E:** Creating new pattern is easy and can be done without much effort. 2. "New Pattern", that was ok. The operation of the prototype in connection with the timeline is simple and intuitive. 0. The timeline, as I said, is difficult with bars. I don't know about measures of eights. So, you also need triple or three-quarter bars for Latin choreographies. You can also include other time signatures. In Latin formations, you can also include some standard music and then play a waltz for 3 or 4 bars, for example. So, you also need a three-quarter time signature, for example. But here: I've never seen anyone write down pattern plans in connection with a timeline so precisely. Most of the time you use a video, I think.

**SL:** Ok.

**E:** Point 8: Creating poses in 3D is simple and intuitive. Yes, you can do it, but I don't find it super easy. Here, again, my opinion is: I don't necessarily need that in the pattern plan. It's very, very detailed and I think you have to put a lot of work into generating the poses, because what if every single one is different, and you want to define that in a pattern plan. I'll either not do it, take pictures or make a video, but I certainly won't model it on little dolls. I think the effort involved would be too high.

**SL:** Okay.

**E:** A 3D view adds value and should exist in parallel to the 2D view. I don't think so. Not for me, -1.

**SL:** Yes.

**E:** But that can vary depending on the use case. So, if I want to present or sell a choreography to someone, then this 3D view has its value. But I don't think I need to work with it as a trainer. Inserting intermediate stops and animating the choreography are simple and intuitive. I don't think I've added any intermediate stops. 0.

**SL:** Okay. That would be the 10 questions and then I would now ask you to just tell me more. Firstly, what did you particularly like and what things did you not like?

**E:** I liked the menu on the right-hand side, I found it easy to use. I also found it easy to move the individual dancers, although I found it irritating that you have to switch to this "edit" mode to do so. So, this "edit" mode and this "non-edit" mode, I must say I didn't find that very intuitive. Somehow, I have the expectation that I can always edit. I always want to edit when I'm in a program like this.

**SL:** Okay.

**E:** And there I also find ... yes, I didn't even realize when I was in the "Edit" mode and when I wasn't, although there is always a clear sign, actually, but somehow, I didn't see it. Maybe you have to change

the color or something. Or just remove the menus, if you can remove them. I don't know. Exactly. As I said, moving and creating new patterns is really easy. I also like the default selection of certain arrangements and the fact that you can use the last previous is also great. Because that's what you actually do. You work your way from pattern to pattern. I don't need 3D. The grid is not precise enough. I've already said that.

**SL:** Which grid steps would you add?

**E:** In any case, to create odd gaps between dancers 0.33 meters and maybe even a very fine one also, so 10 centimeters between ... and 0.25 meters of course, that's definitely missing. I think 1, 0.5, 0.25, 0.33 and 0.1 meters should cover all use cases. Oh, that brings me to "don't likes". Yes, exactly. Web interface, yes. That's cool. What about offline use?

**SL:** The program only exists as a website.

**E:** Yes, because that's a problem, because there certainly isn't always a connection in training halls. To start something while I'm using it in training ... it definitely has to work offline. Yes. It also runs in the web browser, which means it will probably work on the iPad.

**SL:** Yes.

**E:** Yes, that's ok. But as I said before. It has to work offline, because I know that in city X [city name has been changed to protect the identity of participants] there are training halls where I have no reception.

**SL:** Yes.

**E:** Yes, I think that's what I've got.

**SL:** Ok, very nice. That's also very interesting to hear. I've had ... people with different levels of experience in the evaluation so far, but the development has taken place with coaches from the Landesliga. It's always interesting to see how the requirements change. For example, they said: half a meter resolution as a grid would always be enough, because we can't dance it any more precise anyways. But of course, that's completely different for you.

**E:** Yes, but that doesn't work. You can't ..., if you put 8 people in a row with certain meters, with 5 meters or 10 meters distance ... then it doesn't work. And that's why you don't make the pattern wider or narrower. You do that depending on the dance and the impression you want it to make afterwards, and then you say ... then you write down 0.3 meters. But usually, the dancers then know that they should stand close together and behind each other. So, there are patterns where the dancers don't even know their meters and where there is no pattern at all in the pattern plan, but where they are simply told: You have to stand behind him or you have to stand close together. So, you probably don't have every pattern exactly defined. The coaches in the national league probably don't have that either. They simply ignore that. They just put fixed points in between and then say: Yes, these are meters or something.

**SL:** Yes.

**E:** Yeah, funny.

**SL:** But it's definitely ... so I've got a lot of feedback, which will hopefully be incorporated. I am going to continue to work on the program.

**E:** Yeah, cool. Not bad.



## Questionnaire

Please enter your age: 18-21 / 22-25 / 26-30 / 31-35 / 36-40 / 41-45 / 46-50 / **51-55** / 55-61 / >61

Please enter your gender: **Male** / Female / Divers / No answer / Own description

How many years of experience do you have as a dancer in a Latin formation and in which leagues: **All Leagues (since the age of 16 years), international experience (world cup)**

How many years of experience do you have as a Latin formation coach and in which leagues: **All leagues (since 2002)**

How much experience do you already have with creating your own choreographies (in particular pattern and pattern development): **Created multiple own choreographies**

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		I (strongly) disagree		Neutral	I (strongly) agree	
	Question	-2	-1	0	1	2
1	The visualization of patterns from choreographies is intuitive.				x	
2	Positions of individual dancers can be easily assessed.					x
3	The representation of the viewing direction and orientation of the body are simple and intuitive.		x			
4	The evaluation of the utilization of the dance floor is simple and intuitive.					x
5	The visual collision detection helps to create new choreographies.		x			
6	Creating new patterns is simple and can be carried out without great effort.					x
7	The timeline is easy to use and intuitive.			x		
8	Creating poses in 3D is simple and intuitive.			x		
9	A 3D view adds value and should exist in parallel to the 2D view.		x			
10	The insertion of intermediate patterns and the animation of the choreography is both simple and intuitive.			x		

What aspects of the prototype did you particularly like? Please answer in verbally or in key words: **Questions were answered orally, and answers can be found in the transcript.**

What aspects of the prototype did you not like? Please answer verbally or in keywords: **Questions were answered orally, and answers can be found in the transcript.**