

## PhD Study 2 – Design

### Data Science & AI MSc Students

**R** = Researcher, **P1** = Participant 1, **P2** = Participant 2

#### Session 1

**R:** Okay that's time. So, don't close it. So I think what we'll do so if you ummm... yeah so basically were going to talk about it and I have those design points that I came up with but I think the first thing we would do is if you could share your screen we will play the thing that you created. So long as you don't mind. And if you describe the experience that you just had, your immediate thoughts, first impressions. That kind of thing.

**P1:** Yeah.

**R:** Okay cool. Hopefully you can share your screen and it will work alright.

**P1:** Oh okay, so if I share my screen then you can hear the music.

**R:** Yes. If you click the box in the bottom left hand corner that says share sound.

**P1:** Alright.... Share sound. [Plays music] [Laughs] That's what I've done.

**R:** Okay. So, what did you think straight away?

**P1:** So, I study like uhhh... artificial intelligence. So, I'm just curious... like... how does the AI generate uhh these things around my screen. Do they generate them according to what I've done or... just random?

Commented [CJF1]: How is AI generating?

Commented [CJF2]: AI related to my music?

**R:** Umm... what do you think that they are doing if you were guessing? What does it feel like it's doing?

**P1:** Yeah because I did some umm uhh projects on uhh recurrent neural networks so uhh I think they [the blocks] used my input aswell then.

Commented [CJF3]: Think they used my input? {talking about own project}

**R:** Okay

**P1:** Or they used some like... like music that is already created... like there is some input data that is not mine. Also, you are doing like generative AI, it's like I've heard of GAN.

**R:** So yeah... this is... I will tell you what it uses but I'm more interested in what it felt like you were using.

**P1:** Yeah it feels like... I don't think they're generate based on my input. Yeah, I don't think so I don't think so. I think it is generated based on raw data. It's not mine.

Commented [CJF4]: Not using my input

R: Okay. So P2 what do you think?

P2: So I think **urr it was randomly generating the blocks** on the one-time laps because – maybe it's my weakness or maybe I'm **unable to identify** but I don't see any symphony, or I mean similarity in one piece of the music being with the other one.

Commented [CJF5]: Randomly generated blocks

Commented [CJF6]: Difficult to identify similarities

R: Okay.

P2: It was totally randomly generating... uhhh... marks on the music pieces.

R: Okay... ummm... and was that ummm... how did that then influence your music making? Did that make you ummm... when a block was completely random and you tried to use it, was that a good thing or a bad thing?

P2: Oh... I just studied one of my psychology courses just a couple of months back and just using that knowledge of mine uhhh... I think... uhhh... it gets me into a situation where uh... **whatever mood I had it changes my mood because it is unpredictable because, if I'm predicting one thing and its giving me something else and then its combining together and it is giving me something very new and it sharpens my mind and makes me or... makes me confused and when I'm confused it is giving me some kind of a pleasure in the overall time piece.**

Commented [CJF7]: Unpredictability Changes mood

Commented [CJF8]: Confusion which is pleasurable

R: Okay. Ummm... so...

P2: Like it gives me a pleasure. Uhhh... like it doesn't **giving me any similarity but it's coming out randomly out of something very new, very different. And it confuses my mind and when my mind is confused it gives me some kind of a good pleasure or good feeling out of it.**

Commented [CJF9]: Not similar, confusing but good

R: So you enjoyed working through the confusion?

P2: Working through exactly. Instead of my mind telling me what should be there, it is giving me the idea **that this is new and something you need to have fun with now.** Instead of my mind should be processing this should be next, this should be next, this should be next.

Commented [CJF10]: New is fun!

R: Ummm.. so do you think the same thing, P1. Did you have the same experience?

P1: Ah nah, completely not. Uhhh... I have to be honest...

R: So it didn't change your mood in any way working with the AI blocks?

P1: No I'm just like... uhhh... trying to create something but I understand zero about music. **Just trying to create something beautiful but I can't. Yeah.**

Commented [CJF11]: Trying to make something beautiful

R: Yeah

P1: But I like the **dots thing, like, it tries to like. It feels like clicking the keyboard. It feels like it. And I don't understand really... where to play on the piano music keyboard. So I...**

Commented [CJF12]: Dots are easy to understand

**R:** Yeah okay... so I wonder... okay. A question for everyone, right. Its... there is no sort of understanding of how these bits [AI Blocks] work. Or sort of how your music might be impacted... so we said we don't feel like its linked to the music. I tell you what I'm going to ask you to draw something... do you have your pens and pencils and things?

**P1:** Alright.

**R:** Uhh so if you could draw something that would make you figure out the connections between these blocks or invent some idea of how it might show better the ideas between your ideas and the AI ideas? Does that make sense?

**P2:** I'm sorry I didn't get the idea.

**R:** So the idea is... were not sure how the AI is working, right, we have no idea it's just giving suggestions. Umm... how could it communicate what it's doing better?

**P2:** how the AI is generating the music?

**R:** Yeah at the minute it's saying this is the music, and I'm thinking how could it say here is how it relates to you ---

**P2:** --- In terms of the interface?

**R:** Yeah yeah yeah, so it's an answer I don't know the answer to, it's just... maybe speculate with some doodles or something?

**P1:** Do you understand the question now P2?

**P2:** I'm sorry?

**P1:** Do you understand the question now P2?

**P2:** Uhh... I think according to me I'd emphasise... we need to make a diagram of how we think the AI tool should be integrated with us...

**R:** Yeah. Yeah.

**P2:** Exactly. Alright.

**P1:** I don't... I don't have a drawing...

**R:** Yeah yeah yeah, just feel free to chat through.

**P1:** I think one idea could be colours. Cause uh... I think... uh ... so this boxes so for example its going up...

Commented [CJF13]: Using colours to signify ascending notes

**R:** Yep

**P1:** like this [draws an ascending thing on the screen] ... maybe it means the pitch or something.

**R:** Yep.

**P1:** Going up and that means like you are going happier. So maybe a colour representing happy can be here to communicate that it is about happy music. And then if it's going down it is sad. Maybe another colour like blue indicating it is a sad bit. Likes sad piece.

Commented [CJF14]: Going up: happy

Commented [CJF15]: Colours for mood

**R:** so using colours to highlight patterns that might umm....

**P1:** Yeah... the patterns cause a happy music pattern or... or... like it doesn't necessarily need to indicate that it is going up or... something like this one [drag in a block] which is generated by AI. I don't know if its happy or not but if the AI knows its happy then it can show colour that's saying... oh this is happy. And then I can drag it like next to my happy one or... throw it away.

**P2:** I think this is maybe too better... this is too better.

**R:** Okay. And this... so we're talking about happy and sad which can be like kinda subjective? Did you feel like you were trying to create a piece with these moods?

**P1:** Yeah yeah. Like uhh as far as I understand there are only two kinds of music or three... like happy, sad or ... that's all I understand.

Commented [CJF16]: Music either happy or sad

**R:** Okay.

**P1:** But I know zero basically.

**R:** P2 what's your sort of thoughts on the mood of a piece?

**P2:** Mood of the piece?

**R:** Yeah. Did you set out to create a happy piece or... at the beginning?

**P2:** I was just trying to uhh make the dots connect with each to make a symphony or read them in the entire piece. I was unable to identify if it was going to be happy or bad. But I was trying to make the symphony or some kind of art piece.

Commented [CJF17]: Couldn't identify a blocks mood

**R:** Umm... So. Do you have any thoughts about anything that we haven't discussed or that you feel like I should know?

**P2:** Uhh... in terms of the UI like I was trying to make pieces and play together in like multiple parallel rows at the same time. But at some time... at a point I felt like it was being too much noise in the art piece that I was trying to create. But I was unable to delete, to

transform the uhhh... or maybe clear the entire whiteboard at once. And there was like no selections or no way to select the pieces altogether or delete it.

**Commented [CJF18]:** Deleting chunks of blocks was difficult

**R:** Okay

**P2:** I had to click one piece together to clear it. So, in the interface that was a difficulty I felt.

**R:** Okay. Yep. And then same question... for yourself P1.

**P1:** Uhhh sooo I think... ummm... I think there's a difference when you drag the front of the piece and the bottom of the piece uhhh... if you drag the front it's like dragging itself and if you drag the bottom its dragging like the entire series.

**R:** Yep

**P1:** So, I just kinda discovered it myself. I was gonna say add different colours but there is already a lot of colours

**Commented [CJF19]:** Colours to signify how blocks work

**R:** That's okay that's part of the fun. Okay so final question. Out of all the things we talked about... so we've talked about mood, we've talked about umm... problems with the interface and ummm... small things and ummm... patterns in the music. Which of these things is the most important thing to you?

**P1:** For me I'd say like colours. I'd like to have more colours.

**R:** Okay cool. P2.

**P2:** I think. Uhh... like for me I haven't like entirely to understand what entirely ummm... is the objective of this application. So, what exactly we are trying to...

**R:** So, the idea is that we are trying to... the AI should try to make people think about stuff, right? It's about trying to encourage moments of reflection.

**P2:** Uh huh.

**R:** So... I kinda... it's one of the things I don't want to say but things giving too much away. So when you said things like it's a mood change right, that you are given something and it makes you think differently about what you are doing, that's good right? If you're confused, that's the sort of feelings that I want people to be having. Right? If it's confusing then that's a good thing... but if it's confusing and you think "I'm so frustrated, I don't understand" I think that's not good. I want it to be... ooh I'm confused but I'm happy about it or I'm learning something maybe.

**P2:** Okay so uhhh.... if I have to like... our piece should be reflecting on my mood swings and I think I will go with P1's idea of uh... each art piece needs to be different in order for me to identify as this is going to be how this is going to affect on my mood personality. Uhh... so maybe colour... maybe a sign or symbol over the art piece. Or maybe the entire piece of

**Commented [CJF20]:** Blocks should be more different to indicate their mood

**Commented [CJF21]:** Colours to indicate mood

**Commented [CJF22]:** Using symbols

music should look different in some way with the shape or maybe... maybe the colour as well. So, if I have to like go with the idea of changing or reflecting on mood swings I think there should be a different each piece of music for me to identify how this is going to affect on me.

**Commented [CJF23]:** Using different shapes to reflect on mood swings.

**R:** Okay... Okay great. So... Thanks for all of that!

**P2:** Maybe, just another thought which has popped into my mind is that... Maybe the AI art pieces shouldn't be telling me which... or about... what kind of the art piece this piece is. Like it shouldn't be telling me this is happy or sad? Maybe I should feed into the AI machine that if I put together these pieces and then this piece, how this is reflected. There should be a pop up or some other kind of window next to the blue area which should be asking me a) is this most happy or sad... something like that? If I had to feed to the applications... so it can proceed the editor and make something similar in the next block.

**Commented [CJF24]:** Blocks shouldn't tell me what kind of mood

**Commented [CJF25]:** Give feedback to AI

**Commented [CJF26]:** AI offering prompts

**R:** So like... some way to give feedback on the AI's suggestions?

**P2:** Like I'm giving the feedback on the AI so it can use the editor and reproduce something similar.

**R:** Okay P1 what do you think about this?

**P1:** Yeah, I think... that sounds like a very good idea. I think... like.. maybe the AI shouldn't lead us it should just help us because my idea is kinda like... the AI should tell us. Yeah.

**Commented [CJF27]:** AI should indicate not lead

**R:** Okay, well I'll see what I can come up with and bring to the next session.

AI Similarity	How is AI generating? AI related to my music? Not using my input? Randomly generated blocks
	Difficult to identify similarities Unpredictability changes mood New is fun!
Confusion is pleasurable	Confusion which is pleasurable Not similar, confusing but good
Usability	Dots are easy to understand Difficult to identify blocks mood Deleting chunks of blocks was difficult To signify how blocks work
Music Aesthetics & Emotion	Going up: happy Music either happy or sad Trying to make something beautiful
Prompting AI	Give feedback to the AI AI offering prompts AI should indicate not lead

Indicating Mood	Colours for moods Blocks more different to indicate mood Using symbols Using different shapes to reflect on mood swings. To signify ascending notes
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## Session 2

**R:** So, what's your first impressions. And P2 if you start this time...

**P2:** So, this time, like, I would match the colours in it but I was trying to figure out what exactly the colour identifies. I was trying to pin on the blocks myself and try to edit... one of the block and see how the music react to the kind of ... I was trying to click on one but it was just giving me the orange colour on the block without getting anything else, so I would just try to uhhh three layers together: one with the purple note in it, one with the green note in it and one with just the orange colour in it. And I was just trying to figure out what these are trying to do but I wasn't able to catch that... what exactly they mean and I tried my best and I have tried to make... I tried by best to make the symphony but... its pleasing to me right now but I'm not exactly sure what it is saying.

**Commented [CJF28]:** Figure out what colour identifies

**Commented [CJF29]:** Click on block to figure out colour

**Commented [CJF30]:** Comparing colours

**Commented [CJF31]:** Music pleasing but why?

**R:** Yep

**P2:** I'm still able to identify if it's any song or any kind of music familiar with the libraries we have or what exactly they are doing. But they are working now.

**R:** Okay... umm... so P1 lets grab your first impressions also.

**P1:** Yeah so basically the first impression is the colour... it's much more colourful now. Yeah... and also so I was indicating... like... I noticed like... when the blocks kinda like going up like green and going down is like purple. Yeah... and that's like... more helpful it helped me understand the differences between different blocks... like a big block as a whole. And what's interesting is like... its not just like... the colour is not representing the entire big blocks but its more like... like a segment... like you can have multiple colours in one big block. That's quite interesting to me. Uhhh...

**Commented [CJF32]:** Colours helped understand differences between big blocks

**Commented [CJF33]:** Colours indicate segments

**R:** Okay. Umm... cool.

**P2:** One thing R

**R:** Yeah, go for it.

**P2:** Yeah, The other thing I noticed – maybe is moan – is that when I was trying to realign the blocks in the blue area according to the colour I noticed that... every time when the new blocks come up on the screen, the blue one at the bottom, they are like very similar to my one pattern which is orange and green and the upper one... every new one which is coming at the top is kinda a mixture which the colours. So that is something else I notice as well.

**Commented [CJF34]:** Block clusters represent different colours

**R:** Would you mind sharing your screen and your audio and showing me that – that'd be cool.

**P2:** Okay there we go. Can you see my screen now?

**R:** Yes.



**P2:** Alright, so...

**R:** I can't hear the sound... but actually I can just read it by looking at it myself. So if I understand right, you're saying that when you had a blue block its in the way of the other stuff.

**P2:** I'm sorry?

**R:** If you demonstrate for me that's be great.

**P2:** Yeah exactly. So, like see here. I was trying to put the orange block together and the greens and here the purple as well. And one thing I noticed is that every time the blocks come up the new ones which are autogenerated here at the bottom the generator is kind of helping or maybe getting these patterns out of my blocks. Or see its generated again but it is giving no purple here but some blue here. So, this one thing and then... I was unable to identify what exactly the green is playing here. I tried to make one of the green at exactly the same points here but it wasn't giving me kind of similar words when I was trying to – maybe I was trying to identify myself.

Commented [CJF35]: Can't exactly identify green

**R:** Okay. Ummm... so... I'm going to shift topic. Sort of, based on what you said before. So the first thing I think is clear is that we have these colours and, would I be right in saying the colours are sort of helpful in saying which blocks are similar and which aren't – in that you can say these two blocks have green bits in them and these two blocks have purple bits in them.

**P2:** Yeah, but I think. The colour was also giving me the intensity of the one cell. For example, if here, for this cell if I click on one it is delete-able. Maybe if I click it together, sometimes it changes colour, sometimes it doesn't. And I don't know but – I was getting the idea that maybe these ideas maybe are volume up or maybe maximising the pitch or the tone of this single cell mode here.

Commented [CJF36]: Note colours unpredictable

Commented [CJF37]: Colours affecting tone of the cell

**R:** So, when playing with the blocks and trying to see how these colours work. How did you feel about having to do that? Was it annoying, pleasing, was it frustrating?... How did it affect you?

**P2:** Okay, so. In the beginning I did just make one layer here which is at the very bottom with the orange colour only. When I was playing this, it was kind of giving me a low tone or maybe low mood music here.

Commented [CJF38]: Low tone and low mood

**R:** Yep –

**P2:** And when I was trying to play with these upper one, I was unable to identify or distinguish or differentiate between purple or green. But this one giving me some kind of high mood thing actually.

Commented [CJF39]: Couldn't distinguish between colours

Commented [CJF40]: Colours indicate moods

**P2:** So it's like... you can kind of hear the differences. Yeah according to my perception, the orange one was giving me a lo-fi kind of music kind of vibe and the purple and green were giving me a high vibe. Or... a high beat maybe some type of thing.

**Commented [CJF41]:** Colours give off different vibes

**R:** Okay... but there was definitely... so talking about this reflection idea. The colours definitely made you think about the music in a certain way, or do you think you did more thinking now that there are these colours in the blocks?

**P2:** Yeah. The orange I think I was able to identify the tone of the music but with purple and green there was something different, but I wasn't able to identify what the purple and orange were doing here. And I was unable to identify what why or what tone purple and green are different from each other. Whereas with orange it was clear that if I am building these orange together, they are giving me a low-fi kind of music.

**Commented [CJF42]:** Purple and orange not different enough

**R:** Okay, so P1 I will ask you the same question which is... now that we have these patterns and now that you can compare them and see the differences between these blocks, did you reflect on what you were doing more as a result or less?

**P1:** Yeah. Definitely more because there is more information. Before, like, it was just one colour and now you have different colours. And also, like, I noticed the same thing P2 noticed, that the corners, like upper left corner, like the blocks are more busy and the blocks at the bottom corner are like not so busy. Yeah I think... like... its very inspiring the way P1 makes these like 3 lines.

**Commented [CJF43]:** Colours more reflection

**R:** Now I don't wanna take time – we only have a few more minutes – but do you want to share your piece and then...

**P1:** Yeah...

**R:** We can see the difference in approach. And then there is one more thing I want to talk about.

**P1:** Yeah, I only... uhhh... created like a uhhh... single line I didn't create like multiple. This is what I made. And... uhhmm... so... I really want to listen to the blocks... uh... before I put them added to my music so like, some blocks I am interested in I save them and then put them here.

**Commented [CJF44]:** Listen to blocks before listening to them

**R:** Yeah. I see. Yep, okay... ummm... so one thing I thought was interesting that you said P1 that you said in your initial impressions is that the colour represents everything at like a note level. Okay, were just looking at the individual little squares, but it doesn't say anything for the piece as a whole.

**Commented [CJF45]:** Save blocks interested in

**P1:** Okay

**R:** Am I right in...

**P1:** Yeah yeah... yes yes that's exactly what I meant.

**R:** Okay. So, I'm wondering, what sort of information would maybe be helpful to see about the piece as a whole and then in terms of designing the user interfaces, how do you think this could fit in and how could it look?

**P1:** Like maybe... uhhh.... Uhhh... use colour again. Like colour the entire block differently according to the mood as whole. Like the entire block is happy and its one colour. But in that block there can be cells that aren't exact. But entirely is happy. Also like I wish that I could just click on like some button here to listen to this.

Commented [CJF46]: Get mood of blocks as a whole

Commented [CJF47]: Listen to individual blocks

**R:** Yeah yeah yeah... so I was going to ask P1... if you could play blocks individually would that be helpful?

**P2:** Yeah, maybe? And then I started with the three lines together.

**R:** So, I'm thinking what if I did something like... I'll try and draw a picture for you... . What if I had something like this so... Hopefully, you can see this.

**R:** So, if you have like a smaller area, where you could test one block and see what it sounds like... and then an area where you could test one place. Would separating it out in this way be more helpful?

**P1:** Yeah, I think it will be helpful. Like when I was trying to re-arrange and trying to test what exactly the blocks where doing if I just had one button for each block, I would clearly be able to do it for each once.

Commented [CJF48]: Play Button for block better

**R:** So, the other thing I could try and do... it gets tricky because there is only so much space on the blocks. I could try and put a play button on the block. So you would click the block to listen to it. But the problem would be that all the blocks would have a play button on them.

**P2:** It will be very clearly telling us like we can play one single block if they are on each block.

**R:** Yep.

**P2:** I think that will be helpful.

**R:** Okay... I'm going to ask two more things. One is to both of you because I am now curious because in the current design we have blocks in the corners, right. Kind of clustered by some clever maths. I'm wondering... is the clustering useful or would it be better to have AI blocks and an area.

**P2:** You mean to say if we have blocks where exactly, sorry?

**R:** So at the minute the blocks are sort of spread around in the corners? Would it maybe be useful if it was like... all the AI blocks appeared at the bottom, and you dragged them up into the composition area?

**P2:** Maybe I'm not getting the idea... but maybe it'd be the same for me if the play button is at the top or the bottom.

**R:** I'm thinking more like... I'll draw another picture. If I had like... if it looked something like this... so... So the AI blocks at the top and then this is the area where you assemble it.

**P2:** Yeah. So you mean to say that the AI generated blocks appear at the top only and the assembly line at the bottom. It will be better but I think... just correct me... why exactly the AI generated blocks were appearing at the top and bottom at the same time. They were different?

**R:** Yeah so the blocks are in the corners and they are related by certain musical characteristics, but I'm not sure...

**P2:** They are related, the top and the bottom one?

**R:** Yes.

**P2:** Okay, then I was getting the tone accurately when I was trying to... but I think if you were trying to do AI generated blocks at the top and have the assembly line at the bottom, it will be helpful. But then... how exactly are we going to identify which characteristics are associated with each block. For example, right now I wasn't aware of it but with few tries I get the vibe and I get the idea that the top one and the bottom one are a kind of different one. If they were to be together, I won't be able to identify that.

**Commented [CJF49]:** Clustering of blocks helps to identify characteristics

**R:** Okay cool. So... the last thing I want to say is that the blocks are all curvy now. And the idea behind that is two things: i) dragging blocks can kind of be annoying and I thought it would signal where the edges of blocks are meeting more clearly. And the other thing I thought was that once I added the colours in, I thought the interface looked intimidating, right there's a lot going on, it's really busy, lots of things. So by rounding the edges I thought it looked a little bit cuter and a little less scary. Did you have any thoughts on the curvature of the blocks.

**P1:** Yeah I like it.

**Commented [CJF50]:** Curves are good

**R:** Okay cool. I think we like the curves. Okay...

**P1:** Maybe you could also change like, the square buttons into circle, like just get rid of all the edges.

**R:** Okay. Are there any other ideas of things I could try to implement next?

**P1:** I think another idea is called muse. Cause all creators they kind of need a muse. An maybe there could be an idea to put a muse. Like for me I like classical music, and I think if the background is a classical music hall then for me that's kind of my muse.

**Commented [CJF51]:** Muse as inspiration

**R:** Like some sort of an inspiration or like a –

**P1:** yeah yeah.

**R:** Okay. I'll go away and see what I come up with.

Figure out colours	colours more reflection
	Figure out what colour identifies
	Click on block to figure out colour
	Music pleasing but why?
	Can't exactly identify green
	Note colours unpredictable
	couldn't distinguish between colours
Clusters indicate relationships	Block clusters represent different colours
	Colours indicate segments
Colours encourage comparison	purple and orange not different enough
	Comparing colours
	Colours helped to understand differences between blocks
	Clustering of blocks helps to identify characteristics
Colours reflected moods	Colours affecting tone of the cell
	low tone and low mood
	colours indicate moods
	colours give off different vibes
Feedback loops	listen to blocks before listening to them
	listen to individual blocks
	play button for block better
Other	save blocks interested in
	get mood of blocks as a whole
	Curves are good
	Muse as inspiration

### Session 3

**R:** So, I'm going to ask you both a bit more about the music making process, right? So... I want to know, whilst you were writing your piece of music, at what moments did you reflect the most?

**P1:** I think for me the beginning and when I can build like... I can build like a foundation of it, like, these are the two moments when I reflect the most.

Commented [CJF52]: Reflect at beginning

Commented [CJF53]: Reflect whilst building foundation

**R:** So, umm... at the start of the piece and then when you are building up the foundation?

**P1:** Yeah, when I'm trying to like, uhhh... improve it. Trying to improve it.

Commented [CJF54]: Reflect when improving

**R:** Alright, okay. Yep! P2 the same question I guess, so what points did you reflect the most?

**P2:** What moments I reflect?

**R:** Yeah, or I guess... at what moments did you umm... sort of think the most?

**P2:** After listening to the music. So, this specific music.

Commented [CJF55]: Reflect after listening to music (entire application)

**R:** So... when you say specific music, are you talking about individual blocks?

**P2:** Uh, no. I am talking about this application entirely. The music generated by the application. And the other one... with my other music. That I usually listen to.

**R:** So... let's talk about the little play buttons, right? Was that helpful?

**P2:** Yeah!

**P1:** Yeah, very helpful.

**R:** Umm... now my question about them is... ummm... so it's sort of more about how did you use... what was useful about them. So right, we can hear things individually, but why did that help you make your music?

**P2:** To uhh... select one piece to fit into the main timeline. It has... so we can uhhh see this is this beat of this specific uhhh piece of music is going to fit with the previous block and the next one. So it was uhhhh... kind of nice to have the play button in one specific block, and so if I had to change the beat or if the block is not being fitting in the timeline, I can just take it out and play the other one and then place it back into the main timeline and then check. So, in terms of, like, testing and playing different blocks and announcing the timeline, it helped a lot.

Commented [CJF56]: Selecting pieces to fit timeline

Commented [CJF57]: Selecting music to fit with previous block

Commented [CJF58]: Swapping blocks and checking

Commented [CJF59]: Testing blocks

**R:** P1?

**P1:** Yeah, I think it just adds a lot of flexibility to the process of making the music. Just gives me like loads of freedom, I can just listen to a segment and decide what I want to do about that segment and instead of having to listen to the entire piece. Yeah. I like the freedom it gives me.

**Commented [CJF60]:** Listen to segments to decide what to do with the piece

**R:** So. Okay two questions off the back of this... okay. So, do you think – so might be a kind of yes or no question – that you listened to music more often or less often now that we have these little play buttons.

**P2:** Yeah... me like. I listen a lot on a daily basis.

**R:** But did you think that, in the time of your composition, did you find yourself listening to the music more or less, than the previous times we've done this?

**P2:** Sorry, could you repeat that for me once?

**R:** So, you have the small play buttons? Did you find yourself listening to the music more frequently?

**P2:** Yeah, of course. Like, if... like when I'm trying to make a piece here, like, I have to play one piece again and again and see if this is going to fit or not. So, when I'm making this happen in my mind, I'm playing it again and again to register it into my mind, and then I place it into the timeline, and I see how it is reacting with the previous one and the next one. If it's not then I take it out and play it again individually, then I place another one in and see if that one will fit in or not. So, if we are counting the, uhh..., overall play button, how many times I'm clicking on the play button, then I think it has increased more. But it is also giving me the courage that now I can do it – otherwise, before that when I was trying to make the timeline, music timeline symphony, I was... I didn't have the play button on the individual block, so what I was trying to do was make the tune one, but sometimes it doesn't please my mind but... I end up losing the motivation to build something. But now it is encouraging me to play it again and again to see if it is working or not, and I can just place it out and see it individually. So overall, the play button it has increased.

**Commented [CJF61]:** Playing pieces to see if it fits or not

**Commented [CJF62]:** Playing blocks again and again to register in mind

**Commented [CJF63]:** Place into timeline

**Commented [CJF64]:** How it is reacting with the previous one and the next one

**Commented [CJF65]:** Taking blocks in and out to see if it fits or not

**Commented [CJF66]:** Using play more

**Commented [CJF67]:** Small play buttons increased overall motivation

**R:** Okay. P1?

**P1:** Yeah definitely more. So, I really enjoyed this option to play the segment, and it just makes the process more enjoyable and makes me like want to play the music more.

**Commented [CJF68]:** Small play button is more enjoyable

**R:** So did you... umm... I'm going to go off track again... did you find yourself using the play button to play the whole piece still, or did you not really rely on it at all?

**P1:** I still use it. Yeah, I still use it.

**R:** P2? Did you use the big macro play button?

**P2:** Uhh... I just played it once today.

**Commented [CJF69]:** Only played whole piece once

**R:** Right, okay. P1, I guess, did you use it less?

**P1:** No... uhhh... I don't think so. I still used the entire piece more because it feels like... when I just click on the little button it's just that segment so... yeah... so the big one. I want to listen to the entire piece I've made. So, I don't think it's decreased. I think its uhhh.... the same yeah.

**Commented [CJF70]:** Still listened to the entire piece frequently

**R:** So when you click the big button to listen to the whole piece, are you thinking about different things to when you are thinking about just the little blocks?

**P1:** I'm thinking about the entire process... like... the entire music I made.

**Commented [CJF71]:** Big button: thinking about entire process

**R:** Yep.

**P1:** When I click on the small button it's just that segment that I am thinking about. Yeah.

**Commented [CJF72]:** Small button to just think about that segment

**R:** Ummm... and did you think, I guess R2 same question, did you use that big play button to think about different things?

**P2:** I just, played it once to see what exactly I had built now and then I was fixing the small pieces, but I played it once. And... I still... like... I have to make one timeline and then I play it. And then I make it two with the colour differentiator, the orange on the entire timeline of orange on top of everything, and then a mixture of the other time line below that. But when I played that one, I wasn't able to uhh play the single timeline I made of four blocks each. I wasn't able to play them. But I played it once and both time line together they played the music but uh... I didn't do that again. I just clicked on single buttons to see how these making process is happening.

**Commented [CJF73]:** Fixing the small pieces

**Commented [CJF74]:** Using colours to guide timeline

**Commented [CJF75]:** Single buttons to see how the process is happening

**R:** Okay cool. So... my next question is... so when you would click on a single block... and you'd listen to it... how would you decide whether you were going to include it in your piece of if you were going to throw it away.

**P2:** With me I was uhhh checking the last beat of the previous blocks and then I was considering on the very next beat of the next block, and I would see if that blocks are matching or not. If one beat was very low and the other was very high, I thought this was unfit. But if they were matching, kind of, I would place them as best fit in the timeline.

**Commented [CJF76]:** Checking previous beat to next beat to see if they are matching or not

**R:** And, P1?

**P1:** Yeah, that's a very interesting question because I just reflected, and I realised I... even though I can listen to it... when it comes to decision making, I still rely on visualisation. I actually rely on the colours to decide whether I want it or not. It's not actually the sound. Even though I can listen to it, yeah.

**Commented [CJF77]:** Relying on colours to decide on visualisation (not sound)

**R:** So, one of the other changes I made which I guess I want you to talk about what you think. I made the AI algorithm in the background... it actually puts the blocks by colour into the corners now. So, it used to be different musical things into the corners. But now it



literally counts the number of notes which is a certain colour and returns the best matching. So, I wonder whether you could tell. Was this useful? Did it make you reflect more, or did it not make you reflect on the colours and the music as much.

**P1:** I didn't actually notice it. Yeah, it's like normal for me. Average.

Commented [CJF78]: Didn't notice colour based clustering

**R:** Yep. So P2, did you find that the grouping of the notes made more sense or less sense?

**P2:** Uhh... for me... I think I made my own sense with using the colours technique, and the uhh... level of the beat in the block. If it's one of the top it's a lower one and then I see if they are making the connection or not with the next one. The placement of one single colour, for example, one cell of orange, I take that as my connection with the next one and the colour technique which is, where you happen to see the difference between each block.

Commented [CJF79]: Used colours to make own sense of the block

Commented [CJF80]: Colours to see connections between blocks

**R:** Yeah. Okay... so... I'll try and do a quick summary and then I'll ask for like any other comments. Umm... so what I think we've talked about is that when we play the music at these different levels – so you can either listen to the block or you can listen to the whole piece – ummm... you think about different things in the music. So whether you are sort of checking the piece at the end to make sure it all fits or your deciding which ones to drag in. But one thing that I think would be nice is if you could just listen to a line of music, so that you can listen to a little bar and a line and a whole piece at like different levels. So I think we discussed that. Its interesting how, when you are picking the blocks its either relying on colour to match things and would I be right in saying you prefer things that are similar, or that.

**P1:** For me it is similar yeah.

**R:** Okay, P2? Do you think you pick out similar things? I think it's more about if the start beat matches the end of the next beat.

**P2:** Yeah, I was trying to make two timelines, every single time I was trying to make a piece. And, one time. I just focus on, as a background beat where I use the orange colour mostly with the pattern of each cell and how they are connecting each other. And then I use the other timeline which is like a very... dispersed colour range so... like scatter kind of colour, so I used the purple, green and orange in a single timeline, whereas the very low I use just the orange colour as a background beat, to give uhh... one single tone to the entire symphony. So, I use both techniques for both different timelines.

Commented [CJF81]: One colour for background

Commented [CJF82]: Different colours for different timelines

**R:** Okay. And then, that's what we talked about really. So, I think what I'll try and do is try and go for a design where you can listen at lots of different levels and we can see how that works. Any final comments about anything at all?

**P1:** Uhhh... I was thinking about the continuity thing. Like, P2, when he does the music he likes to make sure the two blocks continue. Like, I wanted to do it but I think uhhh I didn't, I just looked at the similarity than if the two are like continuous. I think, one way to increase, to help users to umm.. make a decision based on the continuity more is to like, because in between the two blocks theirs like a huge chunk of grey segment. Maybe, like if the grey can

disappear like, when the mouse is not hovering on it. And then up here when the mouse is hovering on it, to link the blocks more closer. Maybe it helps users to like think about continuity more.

Commented [CJF83]: Blocks closer together might support thinking about continuity

**R:** Okay... yep. Ummm.... okay I'll see if I can do something like that. Okay... and P2, any final comments?

**P2:** Uhhh... one think I want to suggest you to improve with the entire thing is, if I just place one block somewhere, anywhere on the blue area, and I play the big button, no matter where exactly I have placed it – even if I place it on the top or bottom or the right edge – it always plays with the first blocks from the entire timeline.

**R:** Yeah so I remember you mentioning this last time. Ummm... I'll see what I can do. The solution might not be that it clicks up in line and you are able to move around, although I could have ago at something like that... maybe.

**P2:** Maybe... at the bottom there should be the timeline that... if I place it here, this is going to be played this specific timeline only not instead of anywhere else, so that if I have to make a symphony together, or a music together, I could place one place here and another place next to each other and they – even if there is one empty block in-between them I should click on the button and it should play somewhere. Then I can see that this specific blank area is empty and what should I place here. Then I can just click the individual play button on each block and I can see if it can fit here or not. That's something, I think it could help me and uhhh... yep... and there must be – as you mentioned – another button with the timelines with each timeline of the blocks. If I want to play one entire piece of the timelines, I should have the button for that.

Commented [CJF84]: Location based play buttons?

Commented [CJF85]: A button to play the timelines

**R:** Okay, I'll see what I can do.

reflection when building	reflect at beginning
	reflect whilst building foundation
small play buttons to reflect	small button is to think about that segment
	playing blocks again and again to register in mind
	single buttons to see how the process is happening
	small play buttons increased overall motivation
	small play button is more enjoyable
checking and improving	reflect when improving
	testing blocks
	swapping blocks and checking
	checking previous beat to see if they are matching or not
selecting amongst pieces	selecting pieces to fit timeline
	selecting music to fit with previous block
	playing pieces to see if it fits or not

play more frequent	using play more
	still listened to entire piece frequently
colours for decisions	using colours to guide timeline
	relying on colours to decide on visualisation (not sound)
	didn't notice colour-based clustering
	used colours to make own sense of block
	colours used to see connections between blocks
	one colour for background
	different colours for different timelines
design suggestions	blocks closer together might support thinking about continuity
	Location based play buttons
	a button to play the timelines
reflecting on whole piece	Big button: thinking about entire process
	reflect after listening to music (entire application)
	only played whole piece once

## Session 4

**R:** How did you reflect?

**P1:** Ummm... for me... basically... I... this time I strongly feel this like... my reflection is like... really low at the beginning because I just open up this program but as I start making music I start to have more ideas, like the reflection is getting more and more. And then that comes the problem... like... I build this music in a low-level reflection. And then I have new ideas, but then the music is already there. I can't, like, change it, a lot... like. And... the most important thing is like I don't have a place to save this uhhh... block of music that I made during a low-level reflection. And, yeah, when I have more ideas it's like my hands are tied kinda... like... I can't... I'm kind of limited. I have ideas but because of this I have nowhere to save this first block of music because I am limited.

**Commented [CJF86]:** Low reflection at beginning

**Commented [CJF87]:** More ideas: reflection more and more

**Commented [CJF88]:** Build music in a low level of reflection

**Commented [CJF89]:** Can't save blocks of music

**Commented [CJF90]:** Limited as can't save

**R:** Okay, P2, what are your thoughts on.. how did you reflect?

**P2:** Oh well for me I enjoyed the new timeline. Just add on top of everything. Uhhh. It gives me an advantage to play the entire timeline differently and uhh... and yeah. And, I think apart from that I haven't seen anything new.

**Commented [CJF91]:** New timeline is enjoyable

**Commented [CJF92]:** New timeline gives advantage

**R:** Okay. So, ummm...

**P2:** Maybe the size of the entire programme has increased as well but...

**R:** Yeah it's uhhh bigger now. When I was playing with it it was hard to fit all the things in.

**P2:** Apart from that. I think everything is the same right now for me?

**R:** So... I'm going to ask P1 there, cause you talked about, like, you were limited by ideas and you have new ideas. I wonder what these kinds of ideas were?

**P1:** So, like, I made a huge block of music and then I like... added lots of pieces from the AI generated blocks... and then I want to change those blocks. That's the kind of new idea I had. Like at the beginning I was just... put all blocks together but... and then I wanted to change these blocks, but I'm scared – I'm afraid – because... like... cause I don't have a way to save these I already made.

**Commented [CJF93]:** Can't change huge chunks of blocks

**Commented [CJF94]:** Afraid to change chunks of blocks

**R:** Okay. Ummm.... the other thing I want to ask you about there is you talked about, you said like a low level of reflection. What do you mean by low or high?

**P1:** Cause at the beginning, because I just opened up this program like my brain is not ready to make music. So it's just doing something really... uhhh... I'm just putting blocks together. I'm not really listening and just really looking. But then, as I started making it, my listening starts to pick up and I think I just want to... like... actually make my own music rather than just put all of these AI generated blocks together.

**Commented [CJF95]:** Just putting blocks together at the start

**Commented [CJF96]:** Listening picks up towards the end

**Commented [CJF97]:** Want to make own music not just combine AI blocks

**R:** Yep, so P2, did you find a similar thing where maybe you didn't listen lots at the beginning but then you listened more towards the end?

**P2:** Uh... I'm sorry I didn't get that. Rephrase that for me.

**R:** So did you find that at the start you were just combining blocks and then listening more towards when you were finishing up or did you find you were listening throughout the piece?

**P2:** Uh no. I think I have made kind of a melody myself. I use the AI generated blocks uhh.... in the beginning and then at some point I felt there is a missing beat... a missing gap area in one of the blocks. I click myself on that cells and fill it together to make the beat out of the melody. So I think for me it is working now. And I am only using the orange colour throughout my entire timelines.

**Commented [CJF98]:** Identifying gaps in the blocks

**R:** Yeah, so... let's ask about colours? Did you notice anything going on with colours?

**P1:** Yeah. Whilst they... like... I bring the blocks into the work desktop surface. The colours just disappear.

**P2:** Exactly.

**P1:** Yeah, Aha!

**P2:** I saw that as well.

**R:** So, what do you think about that?

**P1:** Uhhh... at the beginning it's like a barrier for me cause I really like... my listening's not waking up yet... I'm like looking. So at the beginning it's like really struggling for me. But as my listening starts picking up, the visual doesn't matter. I just want to create music.

**Commented [CJF99]:** Fading is a barrier at the start – listening hasn't woken up yet.

**Commented [CJF100]:** As listening starts up visuals (colour) doesn't matter

**R:** Uhh... P2 your thoughts?

**P2:** I think uhhh... one of the block... like one of the block I was trying to connect the previous one with the next one. There was a missing cell.. there was no beat atall... so I tried to click on the single cell and it gave me a green area over there. So I think to me, I think, if the block is giving me the green I think the tone is being joining at a good place maybe or like a good beat together.

**Commented [CJF101]:** Identifying gaps in the blocks

**Commented [CJF102]:** Green help to join beats together

**R:** Okay. Yeah, so the idea about the fading away was – cause – in the last one we said “oh were sort of still relying on colours, right, to match blocks” and I thought, if your reflecting on the piece it's better to listen to it and make your own mind up based on listening... ummm... so did you find that because the colours disappeared that you relied more on your ears?

**P1:** Yeah, I think that's why I have this idea like... I realise my listening is picking up as I play with this program.

**Commented [CJF103]:** Listening picked up as playing with programm

**R:** Uhh... P2, anything off the back of that?

**P2:** No, not really.

**R:** Okay cool. So, I think maybe we should share each other's pieces and then any ideas you have. So yeah let's share the pieces and then talk through some ideas. So, who wants to go first sharing?

**P1:** P2 you can go, I want to see your music?

...

**P2:** Can you see the screen now?

**R:** Yes.

**P2:** Okay.

**R:** Oh, okay I can't hear the sound. But that's okay, I get the idea right. One thing I want to ask actually – and I noticed this throughout all the sessions – is, it's all the grey blocks. Right, and I wonder whether that's on purpose. Because if you press the plus button, you get these blue blocks. Ummm... there aren't any blue blocks. So, I wonder why that is or if you prefer to use the AI generated blocks, you know?

**P2:** Grey blocks? You are referring to these grey blocks outside the blue area?

**R:** Well they are all grey. So if you see where the play button is in the main timeline.

**P2:** Uh huh.

**R:** If you click the plus button next to it...

**P2:** Okay?

**R:** Then you get a blue block, right, where you can write your own for scratch. I wonder why you decided not to use that?

**P2:** Okay – so at the last session why I did this it gives me an ability to create my own music, right?

**R:** Yep!

**P2:** But I noticed that if I have to fill this block as well I can fill this one as well, so making the entire one wasn't a necessity for me. So, I just, filled these one myself, like these three and

**Commented [CJF104]:** Making whole blocks not necessary as AI block exists

then I filled these here. So yeah, I was just using the AI generated and customising, maybe, the AI generated ones.

Commented [CJF105]: Customising AI block

R: And so, on that second block where you filled in the sort of notes going down?

P2: Yep

R: Was this something that you learnt from playing with the interface?

P2: Uhhh... yep. I saw that the higher cell is the high intensity and the lower cell is low intensity. And I think, making this one, I will be able to make the music into the low mode one and then then next entire block, like here, is most of the cells are at the lower one. And so I wanted my music to go into high to low and then continue the beat.

Commented [CJF106]: Connecting notes

R: Okay,

P2: That was what I was thinking.

R: Okay great. So P1 do you want to do yours?

P1: Alright... Okay, P2 you have to unshare first. Okay... Alright so this is my music [plays music]. I think that you can hear it.

R: Yeah yeah

P1: So I just generate one blue block at the beginning. Uhhh... hoping that the AI would recognise what kind of music I want. And then I just start using the AI generated blocks... uhhh... for that. So... after I finish all of these and I want to start making changes, like for example I did some changes here and I did some here... yeah in some other places. But the problem is, but I want to save it first. I don't want to just lose it, but there is no place to save it so it feels like – I am limited, I can't just do whatever I want.

Commented [CJF107]: Generate one block for AI to match to.

Commented [CJF108]: Making changes to AI blocks

Commented [CJF109]: Scared will lose work

R: Okay, and it hinders you making decisions on alterations?

P1: Yeah.

R: Okay. So, you added... point out one of the bits that modified the AI block.

P1: So before it's like this [shows a stack of 5 notes 1 tone apart]. And it just give me like BUNG. Like, when you press loads of keys on a piano I don't like that sound. So I just want to get rid of it, like this [remove top and bottom note]. I think also here aswell, or somewhere else.

Commented [CJF110]: Removing discordant notes

R: Yep – and how did you spot those things? Did you just...

P1: Its through listening and seeing because, obviously you can see that this one presses 5 keys at the same time and also it doesn't sound very good to me.

Commented [CJF111]: Can see and hear discordant notes

**R:** Yep.

**P1:** And so I just want to get rid of them.

**R:** Okay. Great – I think that’s all the questions I have. Oooh.. one thing I will ask actually is, was it as fun with these changes? Was it more fun? Less fun?

**P1:** Yeah. Definitely more fun. You can like use, you can just hear this line by dragging it here. This is a very good design.

Commented [CJF112]: New timeline good design

**R:** And P2 did you have more fun, less fun?

**P2:** Yeah, I enjoyed it a lot.

**R:** Okay cool. So, in that case that’s it. Any last suggestions or ideas?

**P1:** Yeah, I just wish, I can save this piece. You know.

**R:** P2? Any last ideas or frustrations or anything like that?

**P2:** Uhhh.. I think P1 is right. I’m gonna go with it. In the second session or the third session you asked to show my screen and I lost everything. There must be some kind of save button or undo button which would help to save and load and continue. And maybe sometime the undo button which is when I load something and want to undo something then there should be an undo one.

Commented [CJF113]: Undo button helpful

**R:** Okay.

Low reflection at start	Low reflection at beginning
	Build new music in a low level of reflection
	just putting blocks together at the start
	More idea: reflection more and more
Scared of loss	Can't save blocks of music
	Limited as can't save
	Can't change huge chunks of blocks
	afraid to change chunks of blocks
	Scared will loose work
Small Timeline’s good	New timeline is enjoyable
	New timeline gives advantage
	New timeline good design
Connecting notes	Green helps to join beats together
	Identifying gaps in the blocks (X2)



	Connecting notes
Listening more towards end	Listening picks up towards the end
	Fading is a barrier at start - listening hasn't woken up yet
	As listening starts up visuals don't matter
	Listening picked up as playing with programme
Preference for AI	Want to make own music not just combine AI blocks
	Making whole blocks not necessary as AI blocks exist
	Customising AI block
	Making changes to AI blocks
Discordant notes	Removing discordant notes
	Can see and hear discordant notes
Other	Undo button helpful
	Match to a block

## AI and Music Interaction Design Experts

**R** = Researcher, **P3** = Participant 3, **P4** = Participant 4

### Session 5

**R:** Okay. So, initial thoughts then. I won't ask a question. Just anything that you immediately want to tell me.

**P3:** Uhh... can I ask... can it be questions.

**R:** Yeah yeah yeah

**P3:** Sure, what do the colours mean?

Commented [CJF114]: What do colours mean

**R:** What do the colours mean? Uh... what do you think they mean?

**P3:** is it something to do with harmony?

**R:** Urrrm... yesss....

**P4:** I think it has to do with grouping because if it is one then it is always orange, but if you group them, you know here, then its three. Hmmm...

Commented [CJF115]: Colours has something to do with the grouping?

**R:** Okay.

**P4:** Now they are all orange actually?

**R:** Aha. Well okay. So, ummm... the colours are if its ascending then its in green and if its in, like, two tones next to each other then you get this purpley colour. Umm... the idea behind that was... so the people I was working is would go "Ah I don't know what mood a block is", right, because they don't know music or anything like that right they are just trying to figure out the mood. So I pulled a couple of music perception papers and highlighted these things.

**P4:** Okay, that makes sense.

**R:** But does, that didn't sound like that's when you saw when you used them, or?

**P3:** I couldn't figure it out, what it was. Yeah.

Commented [CJF116]: Couldn't figure out colours

**P4:** Yeah cool. But then why are those not green? Is it because they are not generated, or –

Commented [CJF117]: Why green

**R:** So... yeah lets talk about it now whilst we go. Might as well. So when I drag a block in, right?

**P4:** Oh yeah, what's the top row?

**R:** It's just another area.

**P4:** Ah okay.

**R:** Okay, so there is a couple of things that changed from the first one right? You can see that the green is slowly fading away now.

**P4:** Hmmm hmmm...

**R:** Its fading towards orange.

**P3 and P4:** Oh!

**P4:** Okay.

**R:** So. That's one feature, right? And the idea behind that, umm... when they were composing before they would just go "here is all the green stuff together, here is all the purple stuff together and here is all the orange stuff, right". And the idea was that if I take it away – although its useful at first because they don't know music they just want something that feels – if I take it away eventually they would be forced to listen to the blocks more.

**P3:** Yeah yeah yeah.

**R:** Ummm... and the idea is that might make them reflect and think...

**P4:** So it's like an initial indicator helper thing which then, after they've put it down. Yeah it makes sense.

**R:** But did...

**P4:** Like for general feedback I have a couple of things.

**R:** Go for it.

**P4:** First of all, when I press play, I expect everything to run continuously right?

**R:** Yep

**P4:** Now after every couple of blocks there's a short break and then it starts the next one. I feel like that's a big... that's a big thing that like reaches you out of the composition process or like stitching together process. The other things are small interface things to be honest?

Commented [CJF118]: Breaks between blocks hinders flow

**R:** Yeah, go for them.

**P4:** Like when you have a block around here and one of them is generated it sometimes auto attaches, right. So if I have this here like this and then a new one generates sometimes they overlap somehow and then, its stitched together.

Commented [CJF119]: Blocks accidentally attach

**R:** And you get random, crazy block stuff.

**P4:** Yeah, and I would also make it clear, or clearer how you can drag them away, because if you don't know that and you do this. Like, which one is it... like this, this is strange behaviour.

Commented [CJF120]: Make clearer how to drag blocks away

**R:** Yep

**P4:** And stitched together, and then these three go away.

**R:** Okay. That's wrong behaviour but that's fun to play with. Ahahahah..

**P4:** Yeah for sure you just need to figure it out. Ummm... wait there was one more thing. Oh yeah.

**R:** Yeah.

**P4:** So, considering or given... I don't know... I'm not sure if like there is any claim, but I would assume that most people start grouping blocks together. Maybe not, maybe they just have them like... lying around across the whole area but what would be cool is that you don't only have a play thing, but you can start play from here, for example. So, maybe like, in you know in Ableton or logic with the top bar.

Commented [CJF121]: Good to play at certain points

**R:** Yeah, timelines I guess?

**P4:** Yeah. Not even a timeline, just like. Maybe an area up there and then like a bar. And when you press the bar here, it will get all the notes that are here and then start playing from here.

**R:** Okay, so something like... [starts drawing].

**P4:** Doesn't even have to be like on the grid, right, it can just have to be like a line and all the blocks that the line intersects

Commented [CJF122]: Need for line that intersects

**R:** So if we have something like... I don't know... at the top of the interface its maybe split into like this is a faint grid in the background.

**P4:** Exactly. And then when you [starts drawing]. And then I would imagine like a... like a bar. So like if there were the blocks now we have here whop whop, theres the play button that you have by default, there's the plus button there, there's a thing. And then here is like a different colour. And when you move the mouse here and click it sends a line through all of these blocks.

Commented [CJF123]: Bar at the top to click

**R:** Okay, so you get like a timeline. What would you call it? I don't know, a big grid? Yeah or a big fat line that scrolls along here.

**P4:** Yeah. Exactly. Doesn't even have to figure out. Can scroll along. But even if it, just, like triggers all of those. Because, like, my problem was that I have to listen to all of them every time I wanted to hear how all of those three together sounded, or those three together sounded, and then you listen to the first two 10 times. Yeah that's my...

Commented [CJF124]: Couldn't listen vertically

**P3:** I think the other option as well. Can you wait, if you're. yeah you can. Ummm... It'd be nice I guess if you could have some kind of mixing feature to turn it on. The way you, as in, you can play blocks individually, it'd be nice if you could mute blocks individually as well.

Commented [CJF125]: Nice to mute blocks

**R:** Yep.

**P3:** Ummm.. cause that would allow you to kind of listen to how pieces.

**P4:** No yeah, that's true. Because right now, muting blocks means dragging them somewhere, and then it gets disorganised quickly.

Commented [CJF126]: Dragging disorganised

**R:** Yeah.

**P4:** I guess.

**R:** So these things... so its this idea or umm... okay, actually here is a slightly more open question. Umm... which is... when did you reflect when you were making music? At what points was it that you stopped to think about the music or any part of the interface you know.

**P3:** Urrm... I guess it was... mostly in trying to get two things... the blocks to sound, uhhh... have some kind of continuance between them. Either, two blocks that are playing at the same time or two blocks that are playing one after the other. Uhhh.. those are the things that I was really thinking about, how to mangae. Ummm... my guess, maybe.. I think that would be an interesting thing for the AI part of it – if you enforce the AI to kind of in some way start where the previous blocks have left off. Urrmmm...

Commented [CJF127]: Getting clocks to continue together

Commented [CJF128]: Interesting for AI to generate continuations

**R:** Yeah, so that's actually – the other lot said that thing aswell which is funny because they don't know anything about music or anything but they found themselves just trying to make up or down patterns or these kinds of things. Ummm... One idea they had in terms of designing it which I didn't do in time, but, the idea was that when the blocks are connected, right, uhh... like this [draws]... when its connected It quite literally, that bit disappears. So that you literally get the grids closer together, so that you can more easily see whether they are flowing. I think you're right about the AI to get to steer it to do, that'd be cool. I don't know how I'd do that but I'd figure it out.

**P3:** I think you could just enforce it I mean...

**R:** So, its... just a database of GPT-2 stuff and I just scan in, but I'm sure I could figure it out. Ummm... but yeah, what do you think of this idea of a collapsing...

**P4:** When does it collapse?

**P3:** When they're connected.

**R:** Umm... when they're connected, but if you hover the mouse over it then it pops back up.

**P4:** Ur... yeah yeah... that sounds... interface design wise that sounds very doable. Like you mean, as soon as I like do this...

**P3:** It becomes one long grid.

**R:** Yeah. It snaps in.

**P4:** This bit merges.

**R:** Yeah.

**P4:** Yeah and then you can have the play button above right or something like that.

**R:** Yeah.

**P3:** Easy. Easy. But I... for the reflection question. For me it was definitely every time after listening to a beat, right? So I started out. Then I drew the melody. And then I wanted to harmonise it. So like, after hearing the melody for the first time because initially you don't even know what the pitches are exactly right so you have to... the first iteration was me pressing play on this one thing that I have. [Plays]. And then once it stops playing... I was like... hmmm okay... click add another one. And then kind of gauge where I can fill the grid so that it works well with that one. And I think, that moment before clicking the plus, after listening to that one, is when the reflection happens. And I even though like, during the 10 mins that... that was the reason there was a break in-between those. Because every time you play one of those, with the break, before this one starts. And every break I was like, for this half a second or second, I was thinking about all that.

Commented [CJF129]: Reflected after listening to a beat

Commented [CJF130]: Before and after listening related to reflection

Commented [CJF131]: Breaks = moment of reflection

**R:** Yeah-

**P4:** -which wouldn't happen if the break wasn't there. Which is actually quite funny cause like usually when I write music I know.

**R:** So in a weird way the break was kind of making you think about umm... things vertically in time.

**P4:** Exactly. In a weird way, the break is like, it makes sense from a design standpoint right, but the break is also like, because its block wise. And, the break... I dunno... for me it felt like it was encouraging the reflection because there was this (inhale) every time after a block. Whereas in a nonlinear, like in able or logic, when you press play it runs and keeps running, and you don't have time whilst you listen to it to think about everything in this kind of structure, block wise. So that was actually quite cool.

Commented [CJF132]: Break encouraging reflection because (inhale)

**R:** So, I think there is kind of that thing you are saying there is that you reflect about it because you have these breaks to thing and the rest of it, but it kind of took you out of it.

**P4:** I guess you need both. I'm sure there's something hidden there about like children's psychology in terms of writing music in terms of how much complexity they can handle at once. Because like, for me, being used to that kind of stuff, I can listen to the same thing, which is why I also said a loop would be super nice. I can listen to that like for 20 mins straight and keep it in my head and not get confused. But umm...

Commented [CJF133]: Reduce Complexity at once

**R:** Newbies might not be as...

**P4:** Or maybe you can even have both features, right, maybe you can have one that is like that one where you encourage this little (huh)... this little pause in-between the blocks where you like (click) consolidate everything you just heard for the last five seconds or however long it is. And then you could have another one which just like runs the whole thing through because there are two different approaches to compositions as well, right. There's this medium scale and then there's the macro scale where... because with the macro scale it was hard with it because you can never hear the full thing. You would never know if there was like a theoretical export button which stitched all of those together you wouldn't know what it sounded like. That's... yep.

Commented [CJF134]: Different approaches to composition and listening

**R:** Anything off the back of that?

**P3:** Uhh.. not really. Urrrr.... No I wasn't thinking about it in the same way. I think most of my focus was on trying to make something that was aesthetically pleasing.

Commented [CJF135]: Goal to be aesthetically pleasing

**R:** Like in terms of music, not pretty looking?

**P3:** Yeah... not exactly.

**P4:** Its always both.

**R:** Yeah

**P3:** I'm trying to thing more in terms off like....

**R:** Well I'll ask a quick question, and it kind of comes off the back of this macro composition, small thing. Which is that you have a play button for everything, and a little play button for the blocks. Ummm... and the idea behind this one is that you could put a line in and just listen to the line. And so did you find yourself reflecting differently at different levels of playback, or?

**P3:** Yeah, I guess so. Yeah, no definitely. I was thinking. Yeah... more on the individual block level and on the whole level. But I think, yeah... the inline things... like the little kinda buggy issues kind of got in the way of that where it didn't allow me to like, listen to... have enough time to actually go okay, I've finished this line, it's nice now. Let me do another line, it's nice now. Let me listen to this line on its own...

Commented [CJF136]: Bugs distracting less engagement

**R:** Yep.

**P4:** I think if you think about reflection on like different levels - on a hierarchy then - you can like describe each of them individually very clearly well. This micro-reflection if you want to call it that where if you just listen to this one [plays bar], this is obviously very simple right?

**Commented [CJF137]:** Playback may relate to reflection on a hierarchy

**R:** Yep

**P4:** So like the reflection that you do on that can... is just connected to the actual melody or chords that are in the grid at that position. But then I think with the... with what we said before as in like being able to play all of them at once and muting them...

**Commented [CJF138]:** Muting could manage the complexity of listening at different levels

**R:** Yep

**P4:** I think you can build up this nice little... like... how to call it... you can build up higher levels of complexity and higher levels of reflection as a result of that

**R:** Yep. Yeah okay.

**R4:** In your own time as a user of the software, which is pretty cool because you can just listen to this one and then you can click on all that are here. And if it is too much you can mute this one and you can mute this one and you can listen to those two, and then you can listen to all three and then you can listen to all four. And each of those

**R:** Yep

**P3:** Like... uhhhh... leads to a different level of reflection. Right? So, I think from that perspective the block design is super useful. It's a really good idea.

**R:** Okay. Right I think that's enough stuff for me to crunch away with and try to do some playing around with.

**P4:** Can we listen to the tracks?

**R:** Yeah... lets do that. I'll just try and quickly summarise ideas. Ummm... yeah okay. We talked about muting blocks, avoiding some of these issues over here when it clicks together or where ummm....

**P4:** When the other one clips in...

**R:** Yep that's right

**P3:** They they kept on binding trying to drag it into one place

**R:** Yeah yeah yeah... it occasionally does some

**R, P3, P4:** Yeah yeah yeah



**R:** We talked about the colours and it was like... you know.. there were colours. We didn't really know what they meant or what they were doing. Right? Ummm... then we talked about levels of playback – I guess muting and umm... getting some sort of way of designing where your playback is at different levels.

**P3:** I think the colours... hmmm... I think, unless you I think like overtly state what the colours are doing I think the colours might actually be abit of a hinderance because, I think, like at some point I think that it might be an indicator of... naturally green is good and orange to red means bad and I thought it was some indicator of something like that.

Commented [CJF139]: Colours hinderance

Commented [CJF140]: Colours have connotations

**R:** Okay

**P3:** So maybe if it was more just... I dunno... a less single coloured thing, or... maybe its just like...

**P4:** Or what you could also do, like, taking inspiration again from DAWs.

**R:** Yeah

**P4:** If you have these – again I don't know if kids already think in this grid music-based way but – I mean, there is a grid inside the blocks and blocks are all the same size so they kind of encourage this grid structure, anyways right?

**R:** Yeah

**P4:** But you could have it so that blocks that are connected all take on one particular colour of block.

Commented [CJF141]: Maybe connected blocks take on colours to distinguish between sections e.g. bass or melody...

**R:** Okay, yeah.

**P4:** So, there is all the yellow that you have inside. Cause that is one of the nicest features inside Ableton.

**R:** Yeah.

**P4:** All MIDI in each track is a different colour. So, you only need one look to know if you are looking at drums or synths or whichever. Same for all the tracks.

Commented [CJF142]: Ableton's midi makes it quick to see what type of track

**R:** Okay. Its...

**P4:** that's one of the most useful features to be honest.

**P3:** The other option is to have the background of the grids change for the notes

Commented [CJF143]: Could change grid backgrounds for notes

**R:** Yeah, uhh... the blocks, right?

**P3:** yeah...

**R:** Yep

**P3:** ummm... no I meant like the white parts.

**R:** Oh okay.

**P3:** Like you could have those change colours.

**R:** Oh okay Yeah okay.

**P3:** And keep the actual.. ummm... active.

**R:** But either way in both of those designs it's the idea that the colours are not just used in the micro, bits of notes, its like... this has this colour of block or...

**P3:** Yeah. This area is like this cause the... and you can have it very faint as well because... I found that the colour kept on... whilst I was using it... I was spending a lot of time thinking like... what does this mean!?!?

**Commented [CJF144]:** Thinking what does colour mean

**P4:** That's a question though because I wouldn't even know whether like, how the kids are supposed to use this in the end.

**R:** But I wonder...

**P4:** Are they... because what I'm thinking is... if you encourage, not enforce, but if you encourage, cohesive colours to connect the blocks that already re-iterates and enforces like this idea that one series of blocks is one particular type of... or is one component of the music as maybe the top one is melody, maybe this one is harmonisation or this one is bass or whatever...

**Commented [CJF145]:** Colours encourage the idea that blocks should be linked to a particular type

**P3:** Nah, that's complex for kids though.

**R:** Well it's not just kids, I'm giving this to just people who have used music now.

**P3:** Yeah but I think what P4 is talking about is completely different. I'm talking about the colours would be green purple and orange. For me that was taking away from...

**P4:** Yeah, I mean... the thing is it doesn't feel very coherent to be honest, because look at those... their ascending and you say its green. But this is green... and then its green again and its purple purple. It's like, without understanding the algorithm that colours the cells its... not very intuitive I would say. Look at this one its purple green, yellow purple. Like...

**Commented [CJF146]:** Colours not coherent

**R:** It kinda just looks random?

**R4:** Yeah, for what the colours – think about it that way – the colours are another dimension of information but in a grid structure like that where the only information is where the notes are and when they are happening as in time and pitch everything is encoded in 2D anyways. If the colours were like velocity or something like that, fair enough, but I feel like, in a grid – no matter if you are 5 years old or 50, you understand intuitively that if it goes from left to right if you press play and listen to it once then it's going to start here and end here. And higher is higher pitch and lower is lower pitch. Right? So, all that information is in that particular structure anyway.

**Commented [CJF147]:** Colours and grid another dimension of information

**P3:** But I guess, its more for like people who have no concept of like... ascending... contour

**P4:** Yeah.. isn't that. I dunno. Isn't that an innate thing. That things go up and down?

**Commented [CJF148]:** Ascending descending innate

**P3:** Well I guess it's more for like if you want to have... uhhh.... if you have a piece which is a block which is ascending or descending at a certain point. You can like, slip a little bit in which is like, see this bit also ascending and descending. Although you could also see from... looking at where it is ascending.

**P4:** But now I'd say it's confusing that the colour disappears, because... if this is ascending and I put it in and I'm like... oh this is cool. But then slowly this turns orange then this connection that I made to green being descending kind of vanishes, but you gave a reason for that.

**Commented [CJF149]:** Confusing that colour fades out

**R:** But then that might not be -

**P4:** - there's kind of a tension in my head there as in why is it happening. I'd be the kid who would be like, why is this happening? Why is this suddenly orange? And know exactly, and I couldn't figure it out. And then it would distract me from actually..

**Commented [CJF150]:** Tension why is fading happening, distracting

**R:** But is it um... If you're thinking things like, why is this happening? Or what is going on? Is that... umm... does it sort of trigger this idea of reflecting? Or are you trying, to think about why it's happening, or?

**R3:** I guess, so for me, it kind of interferences with reflection –

**R:** –right, yeah.

**P4:** That's what, that's more yeah. I mean, I think that's highly personal but I would be like, for me it would be more confusion than reflection in that that urr case.

**Commented [CJF151]:** Fading more confusion than reflection

**P3:** So, when you mean reflection, do you mean reflection on the piece that you are making, right?

**R:** Yeah so.

**P4:** That's the big question man.

R: Yep

P4: Cause I wouldn't say that it's like conducive for reflecting on the music per say but more on... the interface.

P: Yeah.... Okay cool.

Colour's hinderance	Colours not coherent
	Colours encourage the idea that blocks should be linked to a particular type
	What do colours mean
	Colours has something to do with the grouping
	Couldn't figure out colours
	Why green
	colours hinderance
	colours have connotations
	Thinking what does this colour mean
when reflecting	Reflected after listening to a beat
	Before and after listening related to reflection
	playback may relate to reflection on a hierachy
listening vertically	Couldn't listen vertically
	Nice to mute blocks
	muting could manage the complexity of listening at different levels
breaks between blocks	Breaks between blocks hinders flow
	Breaks = moment of reflection
	Breaks encouraging reflection because (inhale)
fading as hinderance	Cofusing that colour fades out
	Tensions why fading is happening, disracting
	Fading more confusion than reflection
play at different points	Good to play at certain points
	Need for line that intersects
	Bar at the top to click
Composition style	different approaches to composition and listening
	goal to be aesthetically pleasing
	Ascending descending innate
usability	blocks accidentally attach
	make clearer how to drag blocks away
	Dragging disorganised
	reduce complexity at once
	bugs distracting less engagement
colour suggestions	maybe connected blocks take on colours to distinguish between sections e.g. bass or melody
	Ableton's midi makes it quick to see what type of track
	Could change grid backgrounds for notes
	Colours and grid another dimension of information
continuations	Getting blocks to continue together
	Interesting for AI to generate continuations

## Session 6

**R:** Okay. The first thing I will ask you then is, is there anything that you want to tell me straight away – that you want to get off your chest?

**P3:** Urrmm.... So initially when I was using the new and improved codetta codes thing. Urrmm... I.... couldn't... initially I didn't thing out what the different things were for, so, the slider at the top. I don't think it was working properly. So, when I was pressing the play button, nothing was happening... Umm... and then I realised you have to kind of move it over... the portion. So... I didn't realise that you have to, potentially the slider had to be... uhhh... ontop of a portion for it to play. It's not as if everything after the slider plays. I mean to an extent, everything after the slider plays but something has to be underneath it in the first place. Urrmm... what else, what else? Ummm.... Yeah... the colours have changed now. I'm not completely sure why or what they represent.

Commented [CJF152]: Slider not intuitive to playback

Commented [CJF153]: Not sure what colours represent

**R:** That's okay.

**P3:** It seems like. Ahh... oh okay, they just correspond to the different sections, okay... . But apart from that I'd definently say that this version, umm..., definitely allowed for a lot more reflection as in it was a lot easier to fine tune melodies. And be able to edit or mute or... .

Commented [CJF154]: Fine tuning melodies = reflection

Commented [CJF155]: Edit and muting helped

**R:** Do stuff like that, yeah?

**P3:** Yeah, things.

**R:** Okay cool, P4, anything you just wanna...

**P4:** Yeah. I mean I would just also say it is much better than last week. I would definitely make it so on – reflecting on what P3 said – so if you click here, it automatically plays. Maybe you can even have like a replacement of the mouse cursor, or it's like a volume button or a volume icon, you know. And then everytime you click somewhere you just like take the ones that it's above and you play from there. Because then it is like completely clear what it does. Because also it's like... I expect that like clicking here that it would play but like... but like... that's now how it works...

Commented [CJF156]: Play button could be linked to the slider

**R:** No yeah, I know what that bug is yeah...

**P4:** ...but before I had to like click and then like drag. Yeah... and.. I don't know, maybe... I guess if you had it so that if you click and it starts playing from where you click. And starts playing then its fine. Ummm.... The big thing is... is... if I press plus [block appears]

Commented [CJF157]: Plus button is annoying

**R:** It's in the way

**P4:** It's in the way and it like... fucks up the configuration... that is...

**R:** Okay, yep...

**P4:** And you can't even get it like off.

**R:** Aha. Yep... yeah so I can say now that I didn't fix any bugs of like blocks clicking together or anything like that so they are all exactly the same.

**P4:** Sure

**R:** Umm...

**P4:** I mean fair enough. Uhhhh.... apart from that... I like it much better. Like, the colours make sense.

**R:** Okay so... here's a thing. And this is something I thought. Which is umm... the playhead, right, or I guess that's what I'm calling the slider at the top, is kinda DAW like, right? And I thought, is that just like... immediately intuitive to people who don't know DAWs. I think the idea of having a play button on it is good.

**P4:** Yep – I think the problem, yeah for sure, the thing with having a slider is usually a slider represents some kind of underlying data, right? But here you don't have any underlying data so, like, designing it as a slider is counter-intuitive in the first place I would say.

**Commented [CJF158]:** Slider might be counterintuitive as isn't steering data

**R:** Yep.

**P4:** So, I would get completely rid of the colour,

**P3:** Yeah

**P4:** And then just make it so that if you click here, maybe you just see this [long vertical line] for a second, and then you know oh okay it plays, and then those start playing right. And then you instantly know, okay, it connects to those, those are playing... I get it.

**Commented [CJF159]:** Make play at point of clicking

**R:** Okay

**P4:** And then you can, like,

**P3:** Yeah. I think it's something like having the uhh.... Everything prior to the slider being slightly greyed out or darker in colour, would be much easier.

**Commented [CJF160]:** Greying out slider would be helpful

**R:** Well I had one idea... I'll draw you something, right. And it's kind of.... And what I'll do is hold it up to the video. Here is one idea I had. Okay... I was expecting it to go on longer... but it looks like... . Uhh... Like this kind of thing... cause then I thought you could have play buttons on the top or either.... What you wouldn't be able to is play [timelines up till the end].

**P4:** Yeah. I think that gets, visually overloading. Because you are like, why do I have so many boxes for doing like a simple thing.

**Commented [CJF161]:** Visual overloading

**R:** Yep.

**P3:** So what... oh is this like segments, essentially?

**R:** Yeah.

**P3:** Yeah. I guess you could do the segments, but the hard thing would be to make them snap in place with like the...

Commented [CJF162]: Snapping in place would be difficult

**P4, R:** Yeah

**R:** would be a pain.

**P4:** Kind of would become like an instant thing.

**R:** Okay. Yep, so... I'm going to talk now about the AI blocks which are the grey ones which pop round. And so, they're like, positioned, like, on purpose, right? I wondered if you had any thoughts on what they might have been doing?

**P3:** Say that again sorry?

**R:** So the blocks are they grey ones like around the edges.

**P3:** Uh huh

**R:** And so, I just wondered if you had any thoughts on what that might be indicating or whether it's hard to tell, or, etcetera.

**P3:** Umm... as in why they are grey?

**R:** Uhhh... no... why they are placed where they are?

**P3:** I guess it's just... I guess they're just... just out of the way. So...

**P4:** No but, R says that the placement has a meaning, like a semantic meaning.

**P3:** Ohhh..... Oh so do they correspond to, as in ones higher up correspond to the orange bar and ones lower down correspond to the...

Commented [CJF163]: Positing corresponds to colours

**R:** That is... that is how it works... yes.

**P3:** Okay...

**R:** But I don't think, at the moment... uhhh that that's very obvious.

Commented [CJF164]: spatial position is not obvious

**P4:** I wouldn't have even made the connection to be honest. Because the bars mean nothing, right, like? Who's to say what an individual bar is.

**R:** Yep

**P4:** So....

**R:** So, the thing is... so I guess you'd colour the AI bars around, right? So, the orange ones would look orange. But I guess my question is—

**P4:** — If you want, if you want to like... have people take all of these and integrate them then yeah, I would definitely colour them according to, what's in the bar.

**R:** Yeah, so. I was thinking about the reflection and things. And I thought, cause your right if your coloured you'd want to drag them into these coloured strips. And I thought, what if you were... they're not coloured right, but you drag them into your bar of music, and then at some point ummm... the bar of music you have got in the like centre of your string changes to another colour, right? Which would imply... if this suddenly went green, would you think "hang on a second... should I be moving it here or what's going on" right?

**P4:** No, I would like colour them but then if you like moved them into another one colour them into the colour of them.

**R:** You'd still match the thing?

**P4:** Yeah for sure. Because like, if that means, like, I don't understand, exactly what they do? Does that mean that these correspond more to like harmony, and these correspond to melody...?

Commented [CJF165]: keep the timeline colours matched

**R:** No nothing like that... the algorithm underneath at the minute is just like... it figures out some musical metrics for whatever you've put in the green bit. And this is the most similar thing...

**P4:** Ahhhh.... Yeah but then... yeah okay... yeah then you definitely have to colour those.

**R:** But I'm thinking, could you do something suggestive with them? Or like say "Hey this one's not purple or green or orange" and you'd go "wah, why is there a colour?" You know. I'm trying to see if ways you can...

**P4:** But if you wanna... if you wanna create the link I'd would like change the layout about. I would move this [workspace] over and then have those... I dunno... uhhh... maybe one two three, one two three, one two three, or something like that.

Commented [CJF166]: reposition to be in lines

**R:** Yeah, okay, that makes sense, yep.

**P4:** And then like... you also, if you have them on that side, it also implies that they are supposed to be appended at the end. So then... and then if they correspond to the tracks already but you still, like, people will go this is here. I imagine it something like this... with more space. So then, those three would correspond to green right. And then some people



will still try to take this one and be like... "oh, I think it could fit here". But then as soon as you do that, it's perfect, it just changes colour. Ummm....

**R:** I'm trying to think... I think its... Okay so lets say like. We've got the blocks on the inside and the outside, right? Umm... I want the UI to do something that basically says... try this block in this place. Right? So it might be a block that is not similar to what the user 's doing... ummm... but the idea is to say "hey, why don't you try this" to like, encourage them to maybe reflect on it or try something they wouldn't normally try. But I'm thinking, how do you actually design that?

**P4:** So, to be clear, you want any of those outside grey blocks, you want to prompt the user to append them to one of the three specific tracks.

**R:** Yep

**P4:** And only one of them?

**R:** Yeah

**P4:** Not just in general, prompt?

**R:** Yeah, yeah. Unless you have ideas for a general prompt?

**P4:** No but that's a different action, right?

**R:** Yeah. Let's do an individual block, right?

**P4:** So just... highlighting an individual block?

**R:** How would you highlight it though? So if I was looking at a block and the highlight came up I wouldn't know where to put it tho.

**P4:** Yeah sure, you could make an animation where it like, hovers, and it like, wiggles around here and wiggles around here and wiggles around here.

**R:** So, would you have it like fly from the corners, like in an animation?

**P4:** Yeah, definitely. Like animate it, like CSS or JavaScript or something like this. Then it goes down after a few seconds then it does this, and then it goes after a few seconds and it does this... . And then, like return to it again. And then... I dunno... if the user dosen't do anything for like five seconds then it wiggles in place like this. And then, it steps down again because it thinks the user dosen't want to use them.

Okay, that makes sense. Ummm... P3, I'll ask you there. Like... it you wanted it to suggest to the user to use a particular block that it might not be looking at, how would you go about designing that.

Commented [CJF167]: could animate blocks to fly in

**P3:** What? From the AI?

**R:** Yeah...

**P3:** Urrmmm.... One suggestion to use on block in a certain place?

**R:** So, like umm... you just put it into place? So would the block move straight into the timeline.

**P3:** No so, is the question like, the AI generates a block and needs to go into a specific line. Like if you have multiple lines of blocks will the AI be suggesting to go to any of those lines or like a specific line?

**R:** Umm... let's say a specific line?

**P3:** I would say then just, it would maybe, slowly flash that colour. Not flash, but like a gradient of that colour. Going up and down.

Commented [CJF168]: could flash gradients of colour

**R:** And fade in the gradient, or something like that?

**P3:** Yeah – cause I mean... if you are using the AI, you might be able to get almost like confidence values and then map that to the brightness of the colour.

Commented [CJF169]: could map confidence values to brightness of the colour

**R:** Yep okay. Ummm... Okay, so a similar question, right? Because we talked about ummm... levels of playback, right. So, I'm wondering if we could design the interface in a way that would maybe encourage the user to try listening to a different level of playback, right? So it might be they haven't listened to the whole piece through in ages, so we want to try and come up with some way of encouraging that. Ummm... thoughts...

**P3:** Sorry say that again.

**R:** Uhh.... let's say... umm.... the user hasn't pressed play to listen to everything in ages. And we want to try and encourage the user to do so. Uhh... so what sort of design ideas might...

**P4:** I've got something

**R:** Yeah go for it.

**P4:** So, we have these different... it doesn't even need to be animated but, quite straight forward. We have all these play buttons, right, and like... you can definitely track how often the user clicks each individual play button, and you can construct a metric of how often a user clicks like the individual ones... or the track ones ... or the main one. And then like you can say if we have 20 plays – just as a random number right now – if we have 20 plays but not a single one of them has come from the whole play button we are like... zimm... flash the play button

**R:** Flash it and highlight it...

**P4:** Flashing might be a little bit aggressive but like... I dunno... make it slightly bigger? Like whom.

**Commented [CJF170]:** flashing for emphasis, but not too aggressive

**R:** Okay...

**P4:** Maybe?

**R:** Is that kind of along the lines of what you were thinking P3?

**P3:** Sorry I, I didn't hear the question.

**R:** That's okay. So it's, we want to encourage users to use play more frequently right, or a certain type of play.

**P3:** Yeah mean play as in play button or as in like-

**R:** -uh, play button.

**P3:** Okay.

**R:** Um so how could you encourage that?

**P3:** Urmmm..... hmmmmmm.....

**R:** I can let you think about it?

**P3:** I think, I think having the... blocks muted... by default, so people have to unmute them and by doing so have to select more parts? Maybe?

**Commented [CJF171]:** could automatically mute parts

**R:** Yeah okay. Maybe, yeah? Okay cool. So that is the list of things I wrote down to ask... umm... actually no I'll ask one more thing, and it's like a general thing which is... so I don't think the AI blocks are working because I don't think that it is really obvious that it is continuing these timelines or strings or things. So umm.... I wondered how you felt about the AI blocks and what they are giving you as musical phrases?

**P4:** Uhhh... they sound like, enough, like... good enough to play around with for sure like, do you like these there and do you like these there. I think the main thing here, the difficult thing for me is because I'd have never made the connection, because all of them look the same right?

**Commented [CJF172]:** hard to see connection between blocks, hard to play around with.

**R:** Yep

**P4:** There is no way to know if this one is this, this one is this. Like, to make that visual connection more striking or pronounced then people will know that.

**R:** Yeah.

**P4:** Music wise, since its mostly monophonic and then and the tempo is slow, I think those things work together quite nicely. So, I didn't have any like... I didn't think like... the music was particularly shit.

**Commented [CJF173]:** Monophonic and slow helps music sound good

**R:** Yeah okay. So P3?

**P3:** Uhh... I think they sound quite random, yeah. Ummm... yeah, I would say maybe like simpler ummm way of generating blocks might not need to use something like GPT, it might be something more... using... yeah something else. Like variations on existing blocks, like transpositions, following contours or I don't know, like maybe putting things in opposite directions... I dunno. Okay... ummm...

**Commented [CJF174]:** Could use simpler generative techniques

**R:** Yep... So I'll try and summarise some things. We talked about the position of blocks, so that they're more clearly linked to the timelines and also making the colours match. Ummm... we talked about this timeline at the top and that we like it but that it needs to be more immedietly linked to the playback and umm... the ideas about it following on.

**P4:** Yeah... and the more visual feedback we get...

**R:** Yep- and there were also some interesting ideas about flashing play buttons and maybe automatically doing things with the mutes or something. Yep and the add button was buggy and the clicking the blocks together was buggy...

**P4:** Oh yeah that was my last point.

**R:** Go for it!

**P4:** Umm... unless you give people an instruction on how this works. It's still like not completely clear how you can drag the blocks now.

**R:** Yep, that's okay I do that in the tutorial.

**P4:** Even then. Maybe you can just, you know, make this thing [block bump] like it wider so you have more space to click. Cause sometimes I've tried.

**Commented [CJF175]:** Could increase block bump

**R:** Yep. Okay.

reflection	fine tuning melodies = reflection
	editing and muting helped w/ reflection
slider	slider not intuitive to playback
	play button could be linked to the slider
	slider might be counterintuitive as isn't steering data
	make play at point of clicking
	greying out slider would be helpful
usability	plus button is annoying
	could increase block bump
grid design	snapping in place would be difficult
	visual overloading
position	positioning corresponds to colours
	spatial position is not obviously related
	no sure what colours represent
	keep the timeline colours matched
	reposition blocks to be in the timeline
emphasis	could animate blocks to fly in
	could flash gradients of colour
	could map confidence values to brightness of the colour
	flashing for emphasis, but not too aggressive
gen music	hard to see connection between blocks, hard to play around with
	could use simpler generative techniques
	monophonic and slow helps music sound good

## Session 7

**P4:** I've got two things right off the bat

**R:** Yeah go for them. Yeah, first question, what do you want to tell me?

**P4:** So like thing number one, I would still like very much advocate for wherever you press on the top bar with like the playing icon

Commented [CJF176]: Faster play when clicking icon

**R:** Yep

**P4:** You start playing from there, because right now, I'm.... (click click click) when I'm here, nothing happens and in my head – like – I mean I get it, I can double click and like drag it, and that happens, but like, I feel like it would be very intuitive to have it like this. You click

Commented [CJF177]: Faster play when clicking icon

R: Yeah, I think that's-

P4: -You click, and then past that it plays.

R: Okay...

P4: That would be perfect. And the other thing is, these [flashing buttons] are very invasive.

Commented [CJF178]: Flashing buttons invasive

R: Yep

P4: Like the highlighting – first of all I think it has matched as you know... synchronous

Commented [CJF179]: Synchronise flashing

R: Ummm....

P4: As, you know, this one starts and this one starts, this one this one this one...

R: Oh the play buttons...

P4: And you just like look at twenty things at once and you're like, what the fucks going on...

Commented [CJF180]: Too many flashes is confusing

R: Yep...

P4: So, I would first of all make them blink synchronously

Commented [CJF181]: Synchronise flashing

R: Okay

P4: And second of all, make it like, less visually intense, it's like... because... as it is right now it could be interpreted as like what the fuck is going on, or, what does it want me to do... like I can't play this one and this one and this one and this one

Commented [CJF182]: visually intense

R: Yep

P4: I don't know so... maybe... even shifted from individual tracks to just the three big ones [timeline] here.

Commented [CJF183]: maybe shift flashing to timelines

R: Yep

P4: Because, like, to some degree I do believe that once you have written something, like, the reflection that takes place for changing it after you've written it comes down to listening anyways...

Commented [CJF184]: reflection comes down to listening once written something (timeline)

R: Yeh

P4: Which means like, if I've put down my notes and I'm happy – having listened to it twice – an indicating, or like indicator, that's like press me again, won't change my mind

necessarily but... maybe if it listen to it like, I dunno, through the whole track or through everything like I'm gonna (click) I'm gonna have that thought and wanna change it again.

**Commented [CJF185]:** listening to the whole track indicates more reflection

**R:** Okay

**P4:** Yeah... those are my two cents for this week.

**R:** Yep, we'll get into those in more depth. But, yeah, first thoughts...

**P3:** Oh, I was going on P4's thing. Maybe like a cool thing you could do with that is like... have... umm... blocks that you can like lock

**R:** Yeah okay

**P3:** So, after you've locked them like... you can't change them, and then they don't flash or something anymore. Or just to more solidify that this thing is done

**Commented [CJF186]:** locking blocks to solidify that the block is completed

**R:** Yep

**P4:** But isn't lock already in place? Like, once I've dragged it, attached it and drawn it, it's already locked...

**P3:** You can't edit it. But yeah-

**R:** - kind of like in umm... photoshop where you can like lock a layer?

**P3, P4:** Yeah...

**P4:** But then you have to think for each click and I feel like that's... a lot again because... like why would I press lock on like 16 tracks?

**Commented [CJF187]:** locking might be difficult for many blocks

**P3:** No.. it's just like... to... this is to say that... "okay I'm done with this thing". So then maybe you can't accidentally edit it or... and then you could also, it'd be a way to not have the clips... the play button flashing up.

**Commented [CJF188]:** locking could control flashing

**R:** Yep.

**P3:** Umm...

**P4:** Hmm.... Perhaps yeah.

**P3:** Urrrrmm.... I.... didn't get but now I remember that the flashing is to try to encourage people to listen to it.

**R:** Yeah. Did it work? Did you end up clicking on things that you thought you wouldn't and thinking about it, or did it just end up annoying you?

**P3:** I think a small amount, yeah. But, I think, visually its quite intense. Ummm... I guess also,

Commented [CJF189]: Flashing small annoyance

Commented [CJF190]: Visually intense

**R:** Its too much going on, isn't it?

**P3:** Yeah.. it wouldn't... it kind of... it doesn't really.... As in, because we were the people who came up with this idea I understand what it is now but if it wasn't me I don't think I would understand.

Commented [CJF191]: Don't understand what flashing means

**R:** Yep.

**P4:** That is... that is the big kicker.

**R:** So... the question there would then be, okay, umm... how would you design it? So I think there is two things: to make it less intense and to make it clear that you should do something- or like to give the user some sort of signifier or direction that you...

**P3:** A paperclip

**R:** A paperclip !?

**P3:** Yeah... a tool...

**R:** Oh, I get what you mean!

**R, P3, P4:** (laughing)

**P4:** That's the question, right? Do we even like, want to do that? I mean I get that the point is to encourage reflection, but like... attention is not a... necessarily cyclical and repetitive process, right, it's like... if I'm happy with something that I've put down, how and when I will reflect on it? I mean, obviously its mediated through the interface itself, but, like, I think a big question here should be to what degree do we want to make people reflect on these things because... you know... you walk a very fine line between like useful feature and like annoyance.

Commented [CJF192]: Might not want to reflect in a cyclical and repetitive way

**R:** Yeah.

**P4:** I feel like there is something in there... that's...

**R:** Yeah so the two things I'm balancing, and it's actually like my whole PhD, it like... you have engagement which is how fun is it and how non-annoying is it – you know... you might be thinking about something but it – you know what I mean – you might have been made to click this because it starts flashing and then you thought about it for abit but that doesn't necessarily mean it was good for your like creative flow and things like that...

**P3:** Yeah yeah yeah, cause the other thing is... I think... what's interesting about this problem of trying to make it... trying to get people reflect on the blocks is that... it ties as in so much to like the process of composition whereas I feel like when I'm using this and when I am



reflecting its from, not necessarily and like a extremely educated point of view , but its... the way I reflect is by going okay, here is this composition, I have two parts that are playing at the same time... how do I make those two parts umm... sound good together.

Commented [CJF193]: Reflecting to see if parts sound good together

**P4:** Yep

**P3:** Umm... whereas someone who... this is I'm assuming made for... meant to be for people who aren't necessarily composition aware. So how to get them to... listen to two parts at the same time...

**R:** I think... from my readings and stuff... and actually previous sessions... comparison is definitely a way that you can encourage reflection – I think. In like... thinking like how ideas connect with eachother...

**P3:** Uh huh...

**R:** So maybe... flashing is great and everything... but maybe... is there a way we can bring bits together that people wouldn't otherwise or trying to show people to play or try these bits or connect together or something like that?

**P3:** Right, yeah yeah yeah...

**R:** I don't know how we would do it?

**P3:** I think this is a good start to be honest, the slider thing, is a really good start, for allowing people to think of... and having the three sections... kind of forces people to think of it as free parts that play together. Umm... a cool thing maybe to happen is if... if maybe these – it does start off with these three as now...

Commented [CJF194]: Slider helps people think about how parts play together

**R:** Yep

**P3:** if maybe...

**R:** Feel free to scribble if it helps...

**P3:** If maybe like, from the three blocks... the three bits on the side like... the new generated blocks might – it might be annoying, I dunno – but if they just kind of just go in, automatically. To make people think that like... as soon as you've made something here a block comes in too, so people think of it as two axes of like...

Commented [CJF195]: Fly in blocks automatically

**R:** So P4 talked about last time... to have like a suggestion that maybe comes down and wiggles around for abit... and then maybe it goes here and like wiggles around here for abit... and then if you don't do anything with it goes... oh okay... . Right?

**P3:** Yeah yeah...

**R:** So, I don't know what?

**P4:** I mean, so I wouldn't necessarily insert them directly because that's kind of like... you know... takes away agency and takes away your... like... natural workflow of like what you want to do. But you might... like write this block and then be like okay I'm gonna write something here, something here. But if the software is like... no no no no... empty block here... empty block for you...

**Commented [CJF196]:** Inserting directly takes away agency & natural workflow

**P3:** No not an empty block, that's what I'm saying, I'm saying the generated blocks – if they can come in. If they actually come in and then, if you think its like... that sounds good I'll keep it... or, that sounds shit... I'll get rid of it.

**Commented [CJF197]:** Blocks coming in forces people to think if it sounds good

**P4:** That changes the whole like... idea of composing, right?

**P3:** Yeah but, that's what the idea of the AI is.

**P4:** Is it?

**P3:** Well Yeah... to like... composition assist bro.

**P4:** Yeah but like... assistance is very different from making you do something.

**P3:** That's what I mean... that's what it's for. These blocks are made to be dragged in.

**P4:** Yeah of course, but do you still like look at them first? You look at the structure and you can relate everything that you see here to what you already have and then make an informed decision of what you want to do.

**P3:** Oh that's what I'm saying. If it's for someone who does not have the... know how to know what is a good decision or not... forcing them... or not forcing them... but making the blocks go in automatically, and then giving them the choice to... well... then they're forced to listen to it again. They reflect and go, "that sounds good", "that sounds bad".

**Commented [CJF198]:** Giving people the choice to listen to blocks again and think if it sounds good or bad

**P4:** Hmmm...

**P3:** And then make them make the decision afterwards.

**P4:** I see that

**P3:** Rather than it being like... cause it think like...

**R:** I think, maybe, yeah if I'm thinking of a middle ground. You could always have your suggestions here or something. And then maybe instead of these flashy things you get like... I dunno... maybe a Bezier curve or something that kind of goes \*ptuong\* or something.

**P4:** Yeah but it's also a... a question for you right. Do you want to strongly encourage reflection because, I'm with P3 on that. If you like, force these blocks in then you are forced more or less to listen to them which is different to like...

**R:** Yeah, that's where the tension is, right. Yeah, that can encourage reflection, but is it in a subtle way that's conducive to creative work or I guess music composition. Um.... . But yeah, I'm sort of looking for these design features that might encourage reflection. And then I can evaluate them and if, you know, I imagine I'll find this kind of like... well it was distracting but I did think more. Umm...

**P4:** It's so hard... so hard to imagine what like... people like that would think. Like, I know for myself, and I can't make like uhhh.. unbiased statement here obviously, but that would be annoying to death because obviously I know what I wanna do. And then reflection... as we said before, happens out of a different motivation for someone who might not know even what to do, or might not even know what they want? Because like one of them you can call like exploratory reflection and like...

**Commented [CJF199]:** Flying blocks annoying for people that know what they want to do...

**R:** Well I have... hmmm... let me show you this. I'm going off track though but that's fine. Umm... so I did some other studies, but it's basically what types of reflection – and it's looking at creative work and not just umm... music. But you kind of have this thing of like people reflect on their current process, so you've got things like do they re-examine things they already know, do they think about their actions and finding different ways of doing the same thing. Ummm.... then you've got reflection on yourself – have you learned anything about yourself. Then you've got reflection through experimentation is what I called it which is kind of these things like I generated tested and revised ideas, so I think this happens a lot in music composition because you try something change it play it, and if you're making reflections in the system. And the last one is reflections on past experience, so did you look back on your past. So I think a question there would be.... What sort of types of reflection – because you're right you've got this sort of exploratory reflection and on the process – What kinds of reflection were going on and what sort of things in the program helped or didn't help with that?

**P3:** Okay... uhhh.. what kinds of reflections... yeah I'd say mostly exploratory...

**R:** In the sense of...

**P3:** Just trying random things and seeing what works umm.... obviously drawing upon some past experiences with music in general but umm.... Yeah I just think a lot of it is exploratory – especially because it's not like a format which is like common.

**Commented [CJF200]:** Reflection mostly comes from trying random things

**P4:** Yeah... I would say it's a mix between exploratory and like – whatever the one was called where we interlink between what's already there.

**R:** Yep

**P4:** So like, building on something that's just done.

**R:** Hmmm... right okay.

**P4:** I feel like the important question is what kind of reflection do you want to encourage, because like... whatever the answer to that is will inform the design of the interface, right?

**R:** Yeah. I think it's about this iterative testing thing, which is why when you're talking about comparisons and trying to see if things are working good together. If you could design it to force people to make those kinds of comparisons, whereas... you know what I mean... again, you were talking about motivation things and if you've got no real drive to check notes and things you could just be clicking blocks

**P4:** Hmmm hmmm...

**R:** Making big long strings of nonsense. So, I think, what you were saying P3 about bringing those blocks in was so that it forces you to try it out.

**P3:** Yeah... to think about things... because if all the blocks came in at once as well, or like, as soon as you finishing one here, maybe something gets suggested here and here. And then once you have all three things here maybe stuff just starts to come in and you can be like "oh, let me listen to what's been suggested" by using the play button.

**R:** Whereas when it's around the outside you're not really inclined to try it if you didn't want to, right?

**R3:** Exactly, yeah.

**R:** Okay. Cool. Okay, we went on maybe a bit of a tangent but I think it is good chat. Umm...

**P4:** The last bit like... the generated ones are just mirrors of what was already there right? There are maybe very subtle differences but like... as I drag the first ones in I think it just repeats them.

Commented [CJF201]: AI Blocks very similar

**R:** I think I need to look at the algorithm. But let's talk about that right, because it's a different generative AI thing... thoughts?

**P3:** It seems the same as me, it's just copies of the first bar.

**R:** Yeah, I think it's too similar, I think I need to whack the temperature up or something like that – I think that's what's going on there. But...

**P3:** And only the first block as well.

**R:** Yeah... there's definitely something wrong okay...

**P3:** I mean I liked it more than the previous one because like... it allowed you to manifest and idea much quicker whereas before it was just random.

Commented [CJF202]: Improved AI helped manifest ideas

**R:** And did you notice any performance things with it...

**P3:** Performance?

**R:** Yeah. Lag, glitches?

**P3:** No

**R:** Okay that's good.

**P4:** Yeah, and even though it was the same, it was nicer this time round because, you tend to have blocks – or I tend to make the blocks similar to each other but varying so... just having a block that's the same is nicer to edit from anyway.

**Commented [CJF203]:** You tend to use repetition anyway so AI blocks similarity was helpful

**P4:** Sure, cause like the last feature that you would add to make it even more to a DAW would be duplicate right.

**R:** Yeah copy paste...

**P4:** Especially when you set out to write a song. Duplication and repetition are huge tools in the toolbox, and then you vary.

**R:** Yep. Okay. Ummm.... So just quickly. AI blocks are coloured, was that more intuitive?

**P3, P4:** Yep

**P4:** yep, definitely.

**Commented [CJF204]:** Block colour more intuitive

**R:** Ummm.... the positioning I followed your suggestions. I have gone for less AI things popping out so I dunno if its three [blocks] but it was starting to look quite cluttered.

**P4:** No, I think that's good

**Commented [CJF205]:** Positioning more intuitive and less cluttered

**P3:** Yeah, I think two is enough, two for each is enough... especially as its like. Before they were just popping up it was like yeah.

**R:** And the last thing I did was I removed the plus button.

**P3:** Yeah

**R:** Cause it would make the blocks fly everywhere... ummm... .

**P3:** I think, yeah, like having the empty ones somewhere is good but then I think you don't need the plus.

**Commented [CJF206]:** Removing plus button was helpful

**R:** Yeah, because I haven't fixed any of the connectionny bugs, but I think the layouts now more intuitive – you are unlikely to

**P3:** No yeah it definitely looks better, like, less visually overloaded.

**R:** Okay. Last question. But umm... these [AI Blocks] are more similar right, and it was nice because it connected with the music and stuff, but do you think that ummm.... you didn't think about the blocks as much or did you think about them more or in the middle?

**P4:** What do you mean? Thought about the generated ones?

**R:** Yeah, you looked at this... did you consider it more or...

**P3:** I think to say... it was neater because before it was randomly placed around the edges which was... err... because it's like orange block orange suggestions it's like much...

**R:** But did the actual... because they're less random now did it stop you searching through lots of examples for ones you liked or any of that kind of behaviour?

**P3:** Urrr.... No. I found myself just dragging in the one it just keeps on producing and editing it for the purpose.

**R:** Yep.

**P3:** Umm... yeah.

**R:** Okay.

faster play	Faster play when clicking icon
flashing intensive	Flashing buttons invasive
	Synchronise flashing
	Too many flashes are confusing
	Visually intense
	Shift flashing to only timelines
	flashing small annoyance
	don't understand what flashing means
nature of reflection	reflection comes down to listening once written sometime (timeline)
	listening to whole track indicates more reflection
	might not want to reflect in a cyclical and repetitive way
	reflecting to see if parts sound good together
	slider helps people think about how parts play together
locking blocks	reflection mostly comes from trying random things
	locking blocks to solidify that the block is completed
	locking might be difficult for many blocks
Fly in blocks	locking could control flashing
	fly in blocks automatically
	inserting directly takes away agency and natural workflow
	blocks coming in forces people to think if it sounds good

	giving people the choice to listen to blocks again and think if it sounds good or bad
	flying blocks annoying for people that know what they want to do
AI	AI blocks are very similar
	Improved AI helped manifest ideas
	tend to use repetition anyway so AI blocks similarity was helpful
helpful updates	block colour more intuitive
	positioning more intuitive and less cluttered
	removing plus button was helpful

## Session 8

R: First thoughts, anything?

P3: All good.

P4: I'm happy.

P3: Yeah

P4: It's like, I think everything that we've talked about has been addressed. I could do everything I wanted to do.

R: Okay.

P4: It's very, very smooth now.

Commented [CJF207]: Interface is smooth

P3: I think the.... These things coming in and out is like a really nice way to-

P4: Yeah, definitely.

R: Yeah, so... I'm going to ask you about the user experience. Yeah so I'm sort of, you know, these flying in blocks... ummm... how did they make you feel when you were writing the music?

P3: It was nice, it was like... yeah... it was nice to have something suggested to come in because... because they come more into your line of sight or the area that you are looking in. Because I found before I wasn't really... cause I was so focused on the central part of where things being played, I wasn't really looking at the edges

Commented [CJF208]: Nice to have suggestions

Commented [CJF209]: Suggestions in line of sight

Commented [CJF210]: Not looking at the edges

R: Yep

P3: And the fact they come in you are like: “ooh ahh hey, hello Mr AI... sure... nice suggestion”. Maybe not, I’ll throw it away or I might listen.

R: Okay.

P4: Umm... its unobtrusive, right, so like it comes in... it doesn’t get in your way, it’s not like clippy which that’s like “Hello here I am in in your screen again and you can’t do anything”... it’s more like, “have you maybe considered this” and then you look and it and you look at the rest what you have and you are like hmm... that could work or not... shooo. But then it shoo’s automatically which is brilliant.

Commented [CJF211]: Ai not in your way

Commented [CJF212]: Look at block... could work

R: Yep- so that’s what- so the worry was that it would be like obtrusive and you would have all these blocks flying everywhere and you would be like oh my god it’s like crazy. But it didn’t seem overwhelming

P3, P4: No

R: ... or annoying?

P3: No

P4: No

R: Ummm... I wonder why then...

P4: Why?

R: Yeah...

P3: Because it goes into an empty space. Because it like takes into consideration its environment. It’s smart to not like overlay itself onto other things and be like “hey you’ve written this for the past 5 mins how about maybe if you like discarded and used me” But like..., they float towards the end to where there is empty space. And I assume once everything is filled up then they don’t float in anymore which... no that makes perfect sense and that’s why it’s not annoying I would say

Commented [CJF213]: AI takes into account the rest of the screen

R: Yeah okay.

P4: It’s like... perfect for... exploration and like initial writing this is perfect.

Commented [CJF214]: Ai good for exploration and initial writing

P3: Yep

P4: If this was like a more advanced editor then at some point you might want to like turn it off right but for this it’s perfect.

P3: Yeah. It kind of bypasses the idea of like having to be like... Okay I’m done with this piece or this part. How do I move on? And then we think about writing another piece and its like –



okay. Ahh thank you. I have more time to actually think about how things sort of work as a composition?

Commented [CJF215]: Don't have to think about individual parts

R: So, did it get more reflective? Did you think about things as they flew in?

P3: Definitely, yeah yeah yeah yeah definitely.

P4: Absolutely.

R: Okay.

P4: That's when I went "oh" because the oh was related to me realising what flew in might actually work and then I kept it.

Commented [CJF216]: AI block causes Oh's

R: And was it also... reflective in the sense of like this exploratory... sort of iterative reflection we talked about in the last session? I suppose the question is how were you reflecting when they [the blocks] came in?

P4: Uh... not... I would say it was in the middle between like exploring and like how to categorise it like but when it flew in I looked at it, and then I looked at what I had so far, in that particular track and then I was like "okay, well that could work". It's between like the iterative reflection... because I didn't listen to it right I just looked at it and I was like... based on what I have just looked at two bars before...

Commented [CJF217]: Compared blocks Not over multiple iterations

R: But, you made comparisons between them?

P4: Exactly, so like, in that way it is like iterative but not in like the fully fleshed where I listen to it three times and I listen to the new one I was like "yes to might fit" – more like intuitive.

R: Any thoughts on the reflection umm... when the blocks came in?

P3: Ummm.... yeah... I dunno. I dunno how I would describe reflection when the blocks came in- I think it was- ... I guess it you know... kind of allows you to, yeah, focus on the music as a whole rather than, how am I going to write these individual pieces. It allows you to go, okay, I have a whole composition here... you can think more compositionally rather than have to write individual pieces which is like...

Commented [CJF218]: Could focus more on the music as a whole

R: Yeah...

P3: For like, someone like me who doesn't have much experience writing multiple compositions with multiple instruments, to have a tool which says... hey don't worry about writing the individual parts I can just help you select.

Commented [CJF219]: AI helps you to just select

R: Cool

P4: And it's perfect that they're tuned to the tracks... although it does do weird things... this one [block] just came from here and it's clearly for the melody.

R: Uh well yeah, so the way it's working is that it just goes randomly to a timeline. So, it could be the top one it could be the middle one, and I...I... did that on purpose because I thought it might be interesting if you had like a bass bit to suddenly be like... ooh go up here. But I'm guessing... maybe because it's all the same sound it doesn't—

P3: Exactly. Because they are all in the same octave and the same sound it doesn't really matter to be honest.

R: So I could...

P4: Especially for kinds because I guess they don't have this strong correlation between like bars... as in like... the coloured bars and this being a track belong to one instrument. Like maybe side note here... okay that's not... but it's interesting...

R: So, what if I had like different sounds for each of the colours? Different instrument sounds?

P4: Then you would... then I'd say you would need to link them to the individual tracks.

Commented [CJF220]: Ai blocks linked to tracks = instruments

P3: Yeah yeah...

R: Cool, okay. There's less flashing going on... but there is still some.

P4: Hmm... No it's perfect it's like the playhead flashes and like the suggestions once they land they like light up a little bit. That's a deal I would say...

R: But did you find yourself... uhh... still drawn to the play button as much?

P4: Yeh. And now it actually works. It's brilliant.

Commented [CJF221]: New flashing improved

R: Ummm

P4: Perfect.

R: Okay cool. Umm...

P4: The funny thing is I think now that... the suggestions were more coherent with what was actually like there with the music as in more related to the previous blocks... at least I felt that way. Than in the previous sessions. I felt like I needed the play button less...

Commented [CJF222]: Suggestions more coherent

Commented [CJF223]: Used play button less as suggestions were more coherent

R: Yep..

P4: Because like, you know, there is some heuristic in the head that's like... okay yeah... it feels like this fits. And then you try it and you cross compare and then like previously I would

have maybe played it twice before to figure out if that exactly sounds good but this time it was more like... you know... the feeling of whether this new blocks matched the previous blocks and went with the other blocks, was more like... confirming in my head. So, I was like "oh okay" and then I only used the play button like once I had the three blocks.

Commented [CJF224]: Compare blocks AI suggests visually

R: Yep. Did you find a similar thing going on along...?

P4: wait... sorry

R: No yeah go for it...

P4: Uhh... just for the individual ones this doesn't apply. For the individual ones I still used it loads. To initially figure out like... the sound...

R: Ummm... yeah... how did the updated AI, its less similar now, but it's still similar enough?

P3: Yeah, it's like really close to the sweet spot.

P4: Yeah. I like it.

R: Yep. Okay.

P4: Don't know. I mean the thing is in that dimensionality there is not much crazy stuff for you to do so it makes sense for the algorithm to simple.

Commented [CJF225]: Simple notes call for simple algorithm

R: Yeah so... I'm going to.... So were talking about reflection because that like the difficult design principle which that is slightly harder to get your head around, I think. But the other was like for it to not be obtrusive which we talked abt about, but still engaging. So did you... what kinds of engagement... by which I mean like... was it attentive behaviour or laughing or... I dunno even annoyance is engagement in some sense, right?

P3: I'd say it's definitely being more like attentive, makes you engage in a way which is like... makes you engage with the... I keep on saying the word composition.

Commented [CJF226]: Attentive engagement

R: Yeah, that's fine...

P3: Yeah...

R: Did you find like... because there was abt of laughing going on and like... are the blocks almost like. I think part of the thing when they come in is almost charming, because like they're silly. I wonder whether that had an impact.

P3: Yeah you should add more crazy animations. So that they like spin around and are like swhoo swhoo swhoo swhoo.

R: Yeah... might be worth trying.

P3: Naahh.. that would be annoying.

Commented [CJF227]: Crazier animations could be annoying

R: Well yeah, but exactly, it'd be on the other spectrum.

P3: ahhhhhh... yeahhh...

R: So maybe I could try different fly in suggestions or like.... I dunno.

P4: Hmm...

R: Yep okay.

P4: I don't have anything to add to like P3's engagement points. It was mostly attentive and then I was surprised because the suggestions because the suggestions actually worked, and I was like "oh" "oh".

Commented [CJF228]: Attentive engagement

R: I'll also ask... because the thing from the initial design was like this sort of outer thing and then things coming in, as a way of being like... being less like a recommendation system. You know what I mean, where it would be like click some sliders or something and it comes out.

P4: Hmm hmmm..

R: Umm... do you find that impacts your engagement having this kind of overall rectangle thing.

P4: I mean for me... the only thing I might add is that like... you see how it works right. You see it flies in and then it rests and then it animates a little bit again and then it flies out again. Umm... so you get that it disappears if you don't do anything. But maybe... it might be helpful for it to wiggle around a little bit whilst it is there as well. Because as soon as it sits down it feels a little bit like... I am here now... you use me... I am demanding...

Commented [CJF229]: Can see how the AI block works

Commented [CJF230]: Might help if block wiggles if not selected, to show sill requires interaction

P3: I don't feel the same to be honest. I think it was quite polite. Like "hey... hey do you mind if I don't..."

R: Its almost like you want it flirt a little bit?

P3: "Yeah"

R: Ahaha...

P4: You could make it like tilt like this and like this and then it could leave again.

R: Okay cool. So, I'm going to talk about this locking idea.

P4: Locking idea?

R: Yeah you know we had the idea earlier that you would lock blocks as you go.

P3: Ahhh

R: so that you could say you were done with this bit...

P4: Yeah

P3: I think with this format its not needed, because the locking thing was only suggested because of the... flashing buttons. As a way to like to stop the flashing.

Commented [CJF231]: Locking was to control the flashing

R: You see I thought about it for abit and it's actually like a classic creativity support tool type thing... because you know to like have undo's or have like stuff like that. If you were locking stuff, I wonder whether that would encourage you to experiment more, because you'd be like "this bit is safe."

P4: Constringing yeah...

R: Yeah you know what I mean... so I wondered whether that was an interesting thing that might relate to this reflection thing.

P4: I fell like that's only a thing whether the lock is like either timed or not undoable.

Yep

P4: Because like if you just have this little flag in your head where you're like... I'm locking this now and I can just unlock you anytime I want... there is no other functional purpose right. Because we talked about photoshop right and in photoshop locking not only does you can't edit it but you can also like lock things together and then move them around together so there is like some sort of function... right? Its not only you cannot edit but there is like more to it. I feel like if you just lock tracks and then you can unlock them again. It's like why.

Commented [CJF232]: Locking would need more function, might be redundant if could be turned on and off

P3: Yeah, it's kind of redundant. Especially for this part [flying blocks] now. For me it was only for the flashing...

R: Yeah to control it abit.

P3: Yeah...

R: Okay...

P4: I feel like as far as the interface per say goes. It's really solid now. Still the animation could be more fluid.

Commented [CJF233]: Animation could be more fluid.

P3: You mean like powerpoint presentation animation style.

Commented [CJF234]: Comparision to powerpoint animations.

R: What like... have curtains come on the block and be like shwooo....

P4: Yeah, to make it buttery smooth.

R: I think that's it. Did I have anything else? Any final remarks?

P3: Great work. From like, when we first tried it I was like well this is kind of...

R: Well it's your suggestions right – I kind of hope one of the things when people do this is that they see their ideas come in because it's not like...

P3: No like, as it is right now, I'm happy. I had a good time.

understandable AI behaviour	can see how AI block works
	might help if block wiggles if not selected, to show still requires interaction
use of space	Suggestions in line of sight
	Not looking at edges
	AI no in your way
	AI takes in account the rest of the screen
comparisons	look at block... could work
	AI block causes Oh's
	Compared blocks, not over multiple iterations
considering the whole	Don't have to think about individual parts
	Could focus more on the music as a whole
	AI helps you to just select
coherent recommendations	Nice to have suggestions
	Suggestions more coherent
	Simple notes call for simple algorithm
	Use play button less as suggests coherent
	compare blocks AI suggests visually
engagement	attentive engagement
	crazier animations could be annoying
flashing	locking was to control flashing
	locking would need more function, might be redundant if could be turned on or off
Other	AI good for exploration and initial writing
	AI blocks linked to tracks = instruments
	New flashing improved

## Designers (DICE and Creative Computing Undergraduates)

**R** = Researcher, **P5** = Participant 5, **P6** = Participant 6

### Session 9

**R** = Okay, so... first question is not... super crazy... it's just what's your first thoughts and your first impressions?

**P5** = Ummm... I think that like... when I first started it it seemed... really simple to use but then I kinda started getting abit... abit lost and I'm not sure if it is because of the I think... I don't know if it was because of it... bugging. It kinda abit slow.

Commented [CJF235]: When first starting out it was simple to use

**P6** = Yeah. I got that a lot. It was bugging quite a lot of it. Like, if I moved one of them, all of them would move with it, if that makes sense.

Commented [CJF236]: Block movement seemed buggy

**R** = Yep.

**P6** = Like the ones of the sides. So it would be like, orrr if I would remove one, then the one next to it would come off as well.

**R** = Yep.

**P6** = Which I don't know if it was just me or... And also the play button?

**R** = Yep.

**P6** = Yeah.... So this is general question? Like what do the general colours mean? Like what... what is the meaning of them. What do they do?

Commented [CJF237]: Not sure what colours mean

**R** = Okay. So this is interesting, right, so this has been coming up a lot, so maybe we can... solve.... So, the colours... ummm... yeah they don't mean anything. So... if you drag like an orange block into

**P6** = I think it's like, it's really simple. I think it's like simple to the point where it almost becomes harder, if that makes sense? Because it's very like simple design, which is like, great, to start off with but then it almost becomes confusing because you feel like you are missing something. Like the other person using it....

Commented [CJF238]: Simple design makes it feel like you are missing something

**P5** = Yeaah... I didn't realise that the three layers were connected. Like I was just going off the first layer and then I was doing the second layer and I was playing it. And then I got to the third and I pressed the big play button on the long line, and I was like oh they are all playing at the same time. I didn't realise that until the end.

Commented [CJF239]: Didn't realise three layers were connected

Commented [CJF240]: Didn't realise playback bar

**R** = Okay. Did you have a similar experience with the play buttons P6?

**P6** = Yeah. Like I didn't realise until, like I was clicking them and I was like playing around with it and I was like oh they all play at the same time.

Commented [CJF241]: Didn't realise playback bar

**R** = Okay. So, the problem there is... the... umm... it's hard to tell what the play buttons are linked to.

**P5** = Yeah

**P6** = Yeah

**R** = Okay, so... yeah. Let's talk about play button stuff and then I will get back to colours. Ummm.... I guess the question would be how would you design it? Because I talked with people before about this idea of reflection and normally when you click play its when you're thinking about the music, right, because you are listening to it to see what you think... umm... and so if I look at – you know at the top there is like a bar with a play button –

**P5** = Yeah

**R** = and you click it and it plays at that line. Right, the idea was... oh you can listen to different bits. But I don't know if that was your experience their?

**P6** = No you could. That was like, when you moved it around you could see the line come up and its really interesting, but I think its just like. If you don't know what this is... like if you don't know what the software, it then you don't know what you're doing almost – if that makes sense – like there is no like link. Like there is a link, like it's very hard because you told us what the software does. But for someone who is starting out it is like... what does this do?

Commented [CJF242]: No link indicating what the play button does

**R** = Okay.

**P5** = And also, ummm.... there just... you know... where the pieces moving around. Was that a part of it?

**R** = Yep.

**P5** = Ah okay, cause I was so confused. They were just all moving around like someone else who was using it.

**P6** = Yeah, I had the same thing. I was like... whhaaatt.

Commented [CJF243]: Fly in blocks was confusing?

**R** = So basically, you've got the three coloured strips. And the music that is inside of that strip gets generated by the grey blocks on the right. And it's like... and like.. they're meant to be kind of similar. That's the idea. Umm... when they start flying around the idea behind that design was to kind of encourage you to try them out – so they come in and you might see them, and you might think "oh maybe I'll use that block". But, is that what you did, or how did that actually play out.



**P5** = No. I did it once but then I didn't want to use them. I mean. I used it a couple of times. Like I made one strip out of like the blocks that they just generated.

**R** = Yep

**P6** = I was like let me just make one strip out of that which is quite interesting cause it was like, almost like AI music cause I did nothing just putting them together. But yeah...

Commented [CJF244]: Make strip out of AI music

**R** = Yeah. I wonder... I would say. Why would you decide not to use it or why would you decide to use it? What decisions did you make at those points?

**P5** = For me, cause I didn't use them. I kind of wanted to make the music myself and it kept generating it for me. And I realised that if you pressed the blocks you can get rid of a note right. I didn't see the point of me having a grey box and then getting rid of all the notes. I'd rather just start from scratch and make my own.

Commented [CJF245]: Rather make AI music from scratch

**R** = Okay. And P6?

**P6** = I liked using them. Yeah. Because... it almost... not made it easier but, you know what to go off of. Okay. But yeah it was quite nice. Yeah.

**R** = Did you find it helped – when we think of this reflection idea again – did you reflect on the blocks that were suggested? Even if the reflection was ehh... I'm not going to use it.

**P6** = Yeah. I think I was changing them around. Because it generates like two at a time of the same colour so I'm like in my head I have to use those orange ones on the orange path. So I might go through both of them and like... let me try the other colours on the path. Like... it might do something different.

Commented [CJF246]: Match colours to paths

**R** = Yeah. So I'm going to spiral around to colours because the problem with the colours is.. it's great because it separates the things but the question everyone always has is "what do they mean?" Right? They just... "what does orange mean?". Did you have any sort of assumptions about what the colours might mean or ideas beforehand.

**P6** = Ummm I thought it was like different instruments or almost like, differently generated sounds at like different octave levels. So like, maybe the first one seemed like a piano and the second one was a trumpet kind of thing, like it was initially at the beginning. Yeah.

Commented [CJF247]: Assumed colours indicated different instruments

**P5** = For me, I think like... the colours tie in with the layout as well. I assumed that the first level would somehow reflect to the green level. Because I kept, I was seeing if it would go across the window, and it did and it went out the blue box that you created.

**R** = Yep.

**P5** = And that is where I went to green. And I was just... yeah... I dunno I just kinda assumed. I was wondering how they all were linked. And that's when I figured out, they could be played at the same time.

**R** = Yeah. So I think it might be a thing of... I think it might be a thing where I need to reconsider the colour pallet maybe or ummm....

**P6** = Yeah

**R** = So, I don't know... you guys are the special designer people who have done the DICE courses and the creative computing things. So I wonder whether you have got any suggestions on how I could colour it, or could reorganise the elements maybe?

**P6** = Yeah

**R** = Those kinds of things?

**P6** = I think, one thing would be like, this reminds me off ummm. I don't know if you've ever seen those DJ booth thingies, like, they were really popular in the 2010's when people would make their own music software.

Commented [CJF248]: Clues in early DJ software

**R** = Right

**P6** = Like they'd have something really similar to this. But it wasn't colour blocks it was more like just lines that will say this sound is going to play over this sound, kind of thing. And you could move it between – if that makes sense, I'm not sure if I'm explaining it correctly?

**R** = Yeah. Do you think you could find a reference?

**P6** = Yeah, I'll try and find a reference and send it to you. Yeah. But it's very like. I remember like seeing them. They're one colour block, their wasn't multiple colours but you could still very easily difference between the two lines because the actual blocks themselves were different colours, if that makes sense.

**P5** = Yeah I get what you are saying. I was kind of like Garage band.

**P6** = Yeah that's it.. those ones where the blocks would be different colours to represent like the playing over eachother but the layout is the same. It's like lines upon lines upon lines...

**R** = Okay. Yep – that'd be interesting to see. Maybe I could try something like that.

**P5** = I would've said the same thing, maybe like, the orange green and purple. I don't think they have to be three different colours. They could just be one colour or, I dunno, maybe like different tones of one colour.

Commented [CJF249]: Use tones of one colour

**R** = Yep

**P5** = And then the actual blocks themselves could be different colours or something. But yeah.

**R** = Umm... could I ask you to do something for me then? Do you think you could grab like a screenshot and annotate on some hex values that you think might be nice. Yea? Only because I am pretty rubbish at it.

**P6** = Yeah I don't mind.

**R** = Ummm... okay.

**P6** = Could I ask? What is the target group for this sorry?

**R** = Yeah. I'm calling them non-musicians.

**P6** = Is their like any age range you are looking it?

**R** = It will be adults. So the idea is that after I have done these iterations, I do a study.. ummm... and there will be like a couple of design features. Like, these flying in blocks and theres also some flashing play buttons you might have noticed, or might have not noticed. Umm...

**P6** = Yeah

**R** = But I'll do a study where I A/B them with or without. And then I'm trying to see if these features increase how much people reflected when they were making their music.

**P6** = Oh okay.

**R** = So there is a sort of tension between – it has to be easy enough so that you can make it, and then, it has to prompt reflection. So that's who I hope to be testing it.

**P5** = Interesting

**P6** = So the thing about the initial colour pallet gave me very much like... ummm.. student vibes. Like under 18's.

Commented [CJF250]: Colour palette was child like

**R** = Yeah.. that's my background so I made things for kids

**P6** = That's fair enough.

**P5** = Yeah.

**R** = Okay – yeah so I'll ask one more question. Because its all about this reflection stuff. If I asked at what points when you were composing did you end up reflecting the most?

**P6** = I'd say when the things were moving around? Like, it was prompting me to think, oh why are they giving me these suggestions? Mainly, like me trying out my own iterations. And that's when I started using the different layers, because initially I was using the one

Commented [CJF251]: Suggestions prompted reflection

orange block. And so it was like let me try using these on these different layers and see what happens.

**P5** = I started thinking the most when I fully understood how it worked. Cause, yeah, when I realised that it all played together, I stopped and had to like really think about what notes are playing on which level thing. And then I wanted to create something that actually sounded nice.

Commented [CJF252]: Playing together most reflection

**R** = Yeah. I think that's something, definitely when you listen to things at different levels and you discover these things people seem to reconsider their music their differently. So the other question there would be how do we encourage people to say... "oh at this point, try using this play button because it's different to other play..." you know what I mean. So I don't know if you have any other ideas on how you could nudge people towards these features?

**P6** = I mean I feel like the flashes are really effective, like you have at the top – the blue flash. Because that itself made me use the button like... even the... some of the icons also flash when they come in. And that's let me try and use that one. Like, even though it was really simple it was really effective.

Commented [CJF253]: Flashing useful

**P5** = I mean, I didn't even notice the flashes until you guys just mentioned it.

Commented [CJF254]: Didn't notice flashing

**R** = Yeah so there is a very difficult balance – and this is kind of what I hope to talk about as we go on – between the flashes being subtle enough that they don't annoy you. Like having big red flashes, you know.

**P6** = Yeah

**P5** = Yeah

**R** = So those kind of things work or seem to work. Okay. I think that's enough to get going with.

Simple	When first starting out simple to use
	Simple design makes it feel like you are missing something
Colours childlike and not instructive	Not sure what colours mean
	Match colours to path
	Assumed colours indicated different instruments
	Clues in early DJ software
	Use tones of one colour
	Colour pallet was child like
Block movement seemed buggy	Block movement seemed buggy

Fly in blocks confusing / reflection	Fly in blocks was confusing Suggestions prompted reflection
How AI music used	Make strip out of AI music Rather make AI music from scratch
Layers reflective but not realised	Didn't realise three layers were connected Playing together most reflection Didn't realise playback bar No link indicating what play button does
Flashing useful/not useful	Flashing useful Didn't notice flashing

## Session 10

**R** = Okay so... first thoughts then.

**P5** = Well... the new colours have made a very big difference, I think. Umm. A good difference. I mean they could obviously be changed abit but it just makes more clear... I dunno... it helped my understanding a lot more.

**Commented [CJF255]:** New colours helped understanding

**P6** = yeah

**P5** = Umm... also. I didn't realise if there was a bin last time but I noticed that this time. Uhh... last time I don't know if I... I remember saying I wanted a bin because I wanted to get rid of everything but I didn't look for it. But this time it was right there so I used it.

**Commented [CJF256]:** Realised bin this time

**R** = Okay cool, P6 your first...

**P6** = I liked it, the black was really nice. And I liked that you changed the – I don't know if it was like this before but – you know the icons that are moving. They've now changed to the colour instead of the background being the colour. I don't know if I'm saying that right.

**Commented [CJF257]:** Black was nice

**Commented [CJF258]:** Block colour changing nice

**R** = Yeah yes... the block colours... yep.

**P6** = Yeah. I think that's a lot more helpful because like it differentiates it but also says, "oh were part of the same sound" it's not continuing, which is really cool.

**Commented [CJF259]:** Coloured blocks differentiates and shows links

**R** = Okay

**P6** = But one thing I'd like to mention though

**R** = Yep

**P6** = The colours, don't be offended... the colours remind me of the sweets that you don't wanna eat like the sweets that are in the bag and you don't want to eat them.

Commented [CJF260]: Colours like sweets

**R** = Yeah... I dunno...

**P6** = Like the colours, they're not every like

**R** = I like most sweets.

**P6** = Fair enough, but when I was like... these colours... I don't know why that's the first thing that came into my head. They just remind me of the sweets that I don't want to eat.

**R** = Yeah yeah yeah yeah yeah

**P6** = Cause they're that colour. I dunno if it's just... they also give me like PowerPoint vibes.

Commented [CJF261]: Colours powerpoint like

**P5** = Yeah yeah! I think

**P6** = That's. It's PowerPoint vibes, otherwise it's like...

**R** = What I did was I took the pictures you sent and I just went over it with a hex picker and I tried to pick out the colours? But yeah, they still can be picked. They do look like sweets, especially when they are translucent.

**P6** = Yeah. I don't know if that's just me but against these colours that's personal.

**R** = Were you going to say something P5?

**P5** = I was gonna say the flashing... I noticed it this time... because of the colours... a lot more. Like, I think it was blue last time I think maybe that helped.

Commented [CJF262]: Flashing easier to notice

**R** = yeah and I think cause now its darker all these things pop abit more

**P5** = Yeah I think cause there are so many colours last time, it was hard to just see stuff that was there.

**R** = So...

**P6** = Also, were their there lines there before?

**R** = The lines, as in...?

**P6** = Yeah. Like there's lines that point to the AI and tell you like oh why don't you use that like.

**R** = No, they're new.

P5 = Yeah yeah

R = Yeah lets, what did you think about those curves?

P5 = They were nice.

P6 = They were helpful

Commented [CJF263]: Curves were nice and helpful

R = uh... how so?

P6 = Like, it's more like, direct like, why don't you move it there. It's very much like telling the user... like... this is what you should try doing... which is quite nice. If it's like for the programme you are trying to create because you are trying to create something that is quite learner based so it's quite nice for that.

Commented [CJF264]: Curves suggest where to look

R = P5?

P5 = It comes up at a time where it's like you're not uh doing something, I think.

Commented [CJF265]: Timing of curves is good

P6 = Yeah.

P5 = It did that and I think it comes up at like a very good time. Like when it occasionally pop up, so it wasn't annoying. And it prompted me to look to the side... add some pieces, you know.

Commented [CJF266]: Curves not annoying

Commented [CJF267]: Curves prompted to add some pieces

R = Yeah so... what I was trying to go for there... I talked about how theirs like colours but it's hard to tell that there is like stuff on the right.

P5 = yeah

R = or is... based on the stuff on the left. Umm... so my idea behind the curves was... does it make that link clearer? That this stuff is linked to this stuff.

P5 = Yeah makes it much clearer.

Commented [CJF268]: Curves make links clearer

R = Okay, cool. Umm... we kind of went freeform there so I've just got to tick off some things. Um... so on the colours of the blocks. I'll actually share because I don't know how else to explain this. Ummm.... so... these timelines are still kind of colour coded. So if I drag this pink block into this one it will become a green one –

P5 = – Yeah, I think it's nice.

R = – to link it together.

P5 = yeah!

R = um. Is it okay? Is it confusing? How did?

**P5** = I think. I thought about because I did that aswell. I wanted to see if it changed colour when you go over. If it was like it had to be specific for each layer. And I don't know if its okay. I don't know.

**P6** = I mean I didn't mind it. I feel like it just was telling you that this line is connected to like this block kind of thing.

**P5** = Yeah pretty much. I think, yeah, I think its alright.

**Commented [CJF269]:** Colour changing for timelines seems alright, shows links

**P6** = But I think the one thing that throws me off the most is like... you know cause they're all the same sound.

**R** = Yep

**P6** = It's like, whats the need to have them.

**R** = Yes, yeah yeah yeah.

**P6** = Because I could do the same thing by just adding. I mean, does it make it louder. What does it mean if I put the same colour block on each of them.

**R** = Yeah, they have no effect. I think... instruments will be coming. I think that's the next thing that I'd have to try and – yeah because I think it gives reason behind the colours.

**P5, P6** = Yeah.

**Commented [CJF270]:** Different sounds would help differentiate for the different colours

**R** = So... umm....

**P5** = I also have a suggestion, before I forget it.

**R** = Yep. Go for it, before you forget, yeh.

**P5** = Make the long bar thing and then bring the blocks highlights, you know when they are playing. But I think what would be cool is if the actual line itself moves with it. It's just like more visual aid kind of thing.

**Commented [CJF271]:** The playbar moving would be helpful.

**R** = Yep. I'll be honest but one of the reasons why I haven't done that is because it is really hard.

**P5** = Oh hahah.

**R** = But uhh... it's not impossible though. Nothing is impossible. Yeah okay. So.... Ummm... on this instruments idea, I was kind of thinking how to intergrate it. So I made... a little picture. Like this... right... now this is just a bad mockup but I thought what if in the background it had like, if this was a trumpet it had like a tiled pattern or something and its like – more



faded out than this, but it kind of indicates that the orange stuff is for trumpets or... other instruments. I don't know what you think about that...

**P6** = I like it. But I feel like its leading back towards the more child-like aspect.

**R** = Yep

**P6** = Like the pattern I would say is giving me, I dunno, to be honest you might just want to simplify it and put an icon on the side.

**Commented [CJF272]:** Icon for instruments would be most simple and less child like

**R** = Like here or something?

**P6** = Yeah, because I feel like once you have these patterns, it like does remind me of children's wallpaper.

**Commented [CJF273]:** Children's wallpaper

**R** = Right okay – yeah yeah yeah.

**P6** = Like in the music room. Which is quite cool but... I don't think that's your audience.

**R** = No, I dunno. Because I'm thinking about the feed-back I get from research people and I think that if it does look to child-like then the feedback is "oh this is silly" and its harder for them to talk about errr like the main point. Ummm. The other thing I drew in here is these little arrows on like the playbar on top. And that's because I was trying to come up with a way to point out that you can move this, because it is not super clear right?

**P5** = Yeah.

**P6** = No I like the arrows...

**Commented [CJF274]:** Arrows on playbar help signify movement

**R** = I dunno whether that

**P5** = Also

**R** = Yep

**P5** = You know like on Spotify its like... it's a bar and then within the bar its like a cylindrical other bar... I think... like music. And it gives you the notion that you can like slide.

**R** = Like this [shows Spotify bar] kind of thing?

**P5** = Yeah. So, like that, if that was within... that.

**P6** = Yeah but with like the changing of colour. I don't know if it could do that – like if its too difficult.

**Commented [CJF275]:** Colour changing on left hand side of the playback bar would be helpful

**R** = Yeah yeah yeah... well... yeah. Yeah everything's, don't limit any ideas to what I can do. That's not a problem.

**P6** = Yeah ((laughing))).

**R** = Yeah okay, so like maybe stick the play button to one side abit or something or? And then have a circle or?

**P5** = Yeah? Maybe?

**P6** = Yeah. I think that'd be quite cool.

**R** = Okay. Here is my list. Uhh... okay... umm okay quite one. The line for like the playback thing is always visible and it's like that faint red thing.

**P5, P6**: Yeah

**R** = Is that better? I was trying to make it ummm... more obvious straight away that you can play them all at once.

**P5** = Yeah, I think it's better.

**P6** = It is better. I agree.

**R** = Okay. Umm.... So yeah. So last week we also talked about these flying in blocks, right? Are kind of. It was like... its confusing why it happens at first, so imagine that you see if the first time your thinking "what is it doing all of a sudden?", right? So... I thought one thing you could do, and it's alittle bit. Is like... is have like a little thing in the corner that like flashes at you, and it is like. Hello. And when you click on it then maybe it is like... oh do you want me to drag in the blocks?

**P5, P6** = Yeah.

**P6** = Yeah, I feel like having the option of whether you want it or not might be helpful I don't know.

**P5** = I've seen like sites like where there's always like something there and then when you click it kind of adds a screen ontop and then it does what you are going for here. Like you'll have suggestions and stuff in every bit, or like, yeah pretty much that. So, I think that would...

**R** = Have you got an example of one of those sites where you could throw a link across?

**P5** = Don't know. It's like, you know when you first join something

**P6** = Like even like procreate or photoshop they have like these little, oh why don't you try this. Like design apps. Tell us...

Commented [CJF276]: Visible line is helpful

Commented [CJF277]: On screen suggestions might be helpful

Commented [CJF278]: Procreate and Photoshop for onboarding

**R** = I think I know what you are on about. I think they call it onboarding. Where they like show you where it is the first time and its like... ooh you can click here and ooh you can click here and like.

**P5** = Yeah

**P6** = Yeah

**R** = Okay. So... ummm... at the moment, so uhh... this green block is moving into the green... unhelpfully right... but sometimes you can have an orange one that comes down and sits here right. Just to sort of arbitrarily mix it up and try and make people thing, but do you think I should do that?

**P6** = I have a question?

**R** = Yep.

**P6** = Is it necessary to have the like AI ones to be a certain colour? Or is it because it is generated by that line?

**R** = uh... yeah they don't have to be that colour. But this stuff that it generates is similar, but you can see the green is just one line of notes and is generating things that are abit like it but abit different.

**P6** = Ohhh. Okay.

**R** = This is twinkle twinkle little start here. So if I play this one [plays block] right its a little bit like [plays block] [plays the blocks again]. Right, so that's why I match the colours.

**P6** = Oooh... that makes more sense.

**R** = But do you think suggesting that they get matched over here or swapped around is a problem or...?

**P6** = Not really. But one suggestion I'd have is that maybe have them in more of like an organised way, rather than like overlapping over eachother, like on the side itself.

**R** = So kind of like

**P6** = Like in an organised pattern.

**P5** = Yeah.

**P6** = Yeah because visually its like "oh these are options" not just things on the side.

**P5** = Yeah.

**Commented [CJF279]:** Neater workspace would make the blocks seem more like different options

**R** = Yeah, P5 do you think similar?

**P5** = Yeah, I think, yeah I agree basically.

**R** = Cool, yeah okay. So... ummm... yeah so my other question would just be suggestions but I think also, problems, or things that are still annoyances would be good to iron out.

**P5** = Umm.... I'm trying to think of something that I haven't said already...

**P6** = Yeah, same.

**R** = That's alright, I've put you on the spot.

**P6** = Is there a reason why there is no words?

**R** = Umm... so it's meant to be like exploratory...

**P6** = Okay

**R** = so I hope to... when they do the study I will do like a video showing them what to click on and I'll probably give them 10 mins to try it before I say it's like "now write a piece of music" so that they get-

**P6** = Yeah. So, like another suggestion would be, but maybe like having someone try it without telling them anything about it.

**R** = Yep!

**P6** = Like, just giving them the software because it has no words and then... see how they explore it. Without even saying this is for AI music, nothing, just like what is this? What do you think about it? What do you think it does? Because that way you're going to get like a...

**P5** = Like what's the purpose of it?

**P6** = Because that way you are going to get a very like user response. Not from a design perspective or anything, but from like an actual user.

**R** = Yeah... I guess that' be interesting. Because also when I get the user's I'll still be getting a mix of like... it'll be some DICE people and some Data Science people because they all have different opinions.

**P6** = Or even like a parent or a sibling? Look at it, like, don't even tell them anything, just like "What do you think about this?".

**P5** = I just realised, your play button on the left and the actual play button on the sliders are the same size and I think the ones on your slider should be bigger, just cause it's the main. Or even if like a different shape or something.

**Commented [CJF280]:** Playback slider button should be bigger

**P6** = Also I have another suggestion, you know when the play button passes the section – like it turns yellow doesn't it. Maybe like keeping that colouration going, so it's like, oh that's all played. Instead of like going back to the original colour.

**Commented [CJF281]:** Keep previous colouration yellow on playback slider.

**R** = Yeah okay.

**P6** = Like so like after it's passed it goes back to the orange colour. So instead of that keeping it the same colour until the whole thing is reset.

**R** = Yeah. So, after it plays it jumps back to the start maybe?

**P6** = I think so, but like keeping the colouration like changed to show that this has played already. Like even though it's a different block, this bits already played.

**R** = Yeah. That makes sense. So, it like fills in almost?

**P6, P5** = Yeah.

**R** = Okay.

**P6** = It looks less like a puzzle as well that way.

Reskin	Flashing easier to notice
	New colours helped understanding
	Realised bin this time
	Black was nice
Block colours	Block colour changing nice
	Coloured blocks differentiate and shows links
	Colours like sweets
	Colours PowerPoint like
	Colour changing for timelines seems alright, shows links
Curves	Curves were nice and helpful
	Curves suggest where to look
	Timing of curves is good
	Curves not annoying
	Curves prompted to add some pieces
	Curves make links clearer
Play bar suggestions	Visible line helpful
	Play bar moving would be helpful
	Arrows on play bar help signify movement
	Colour changing on left hand side of the playback bar would be helpful
	Playback slider play button should be bigger
	Keep previous colouration on playback slider
different sounds	Different sounds would help differentiate for the different colours

	Icon for instruments would be less childlike
	Children's wallpaper
onboarding	On screen suggestions might be helpful
	Procreate and photoshop for onboarding
neater	Neater workspace would make the blocks seem more like different options

## Session 11

R = Okay. First impressions.

P6 = I like the instruments. Like the addition of instruments.

Commented [CJF282]: Like new instruments

R = Yep

P6 = It makes it a lot more enjoyable, like, there's a lot more to do now.

Commented [CJF283]: Instruments more enjoyable

R = Did it solve this idea of...

P5 = Yeah it made it, it just makes sense now.

R = Yeah

P5 = Like before-

P6 = Like the colours make sense

Commented [CJF284]: Colours make sense

P5 = yeah.

R = Okay

P5 = I like the arrows

Commented [CJF285]: Likes arrows

P6 = Yeah

P5 = Umm... the one thing that I think is umm weird but not weird

R = Yeah

P5 = Is when you... wait... so for example the lines here

P6 = So whilst its playing

P5 = Yeah so when you play it... whats the point that I'm trying to make

P6 = Yeah, so when you play it so unless then you have like three and you put another one and want to replay the whole thing it only replays the one after, like the one before it, like it doesn't play the whole thing so it's just like...

R = Oh so it's just playing this one

P6 = Yeah so the one before it, so it will start from the one before it where its starting from the begging.

P5 = Like like that

R = Okay

P5 = And also if like the line was here for example and then I press this it doesn't play the whole one it just plays that. Which I think dosen't make sense, because, this does that lot kindof. Like this button should play the whole thing rather than just.

Commented [CJF286]: Buttons for timelines should not use top bar

R = So these buttons should just play like from here onwards?

P5, P6: Yeah... yeah...

R = Or maybe like having their own individual line that pops up when clicking on them. Like that you can scroll through.

Commented [CJF287]: Smaller individual playhead lines

P6 = Yeah that'd be good

P5 = Yeah yeah

P6 = So then you can have the like, element of like, oh I want to play this section rather than this section and the whole thing, but not having to reply on the large button to do so.

R = Ummm... how did you find the lines behaviour? Did it seem to be playing in line.

P5 = Oh, yeah

P6 = Yeah

P5 = It highlighted it, it was much more clear

Commented [CJF288]: Highlighting helped clarity

R = All that stuff. So, did you look at the flashing buttons much?

P6 = I mean, I noticed them but they weren't really like the biggest point that I'll take away from the whole thing.

Commented [CJF289]: Flashing noticed but not huge

R = Did you... do they prompt you to do anything differently at all or is it?

P5 = Hmmm... no

P6 = I'd say no

P5 = I think maybe because we are like used to it at this point.

P6 = Yea:::h, I think maybe that might be it

R = Umm... because I was thinking, with the curves, the curves are... what was interesting was when one of you said ummm it made you look somewhere else right

P5 = Yeah

R = Ummm... so... what if I did something like... lets say my play buttons up here and you are over here and you just have a curve go phwong from your mouse

P5 = Okay

P6 = Okay, just to prompt us to play it?

R = Yeah, I think... yeah basically. Instead of it going

P5 = Flashing

R = Flashing like that... if I used one of the curves... you know like when it appears for the blocks and just disappears. If I possibly drew one of those instead would it... I dunno?

P6 = I mean I feel like the play button on its own is still very effective because we all know what the play button does, and so we'll use it regardless so I don't think its necessary to have a curve to tell us to do that. Cause its like a given, you're going to use the play button regardless to use this whole thing.

R = What is I was doing it like... I'm guessing you're using the play bar at the top. So, you've got these ones. These little play buttons? Did you use those atall.

P6 = Yeah I used them

R = Alittle bit.

P5 = Alittle bit, yeah.

R = So I was thinking with the curves I could be like "hey you've done loads of tiny plays... please do a big play."

P5 = yeah?

R = yeah. Maybe?

Commented [CJF290]: Now used to the flashing != behaviour change



P6 = maybe?

((Laughing)))

P6 = I feel like the curves will just add so much more... like... make the screen clogged up when it doesn't need to be.

Commented [CJF291]: More curves = busy screen

R = Yep

P5 = Yeah, I get that, yeah. I think... I think the flashing does... yeah, I think it works. I think this might overcomplicate it abit.

Commented [CJF292]: Flashing less complicated

P6 = Yeah. You'd just have unnecessarily lines everywhere and it takes away from the actual thing itself.

R = So one of the things I wrote, is... actually... seems quite busy.

P6 = Organised is nice. Like on the side, I quite like that now.

P5 = Oh yeah..

R = That's organised.

R = Umm... I wonder...

P5 = Made it less busy

Commented [CJF293]: Organisation helps busy-ness

R = Yeaah... I think I might have to remove some of the animation or something or... do I do it less. You know..

P6 = Ummm... I'd say you could do it less. I don't think it's that much animation like... its not overbearing.

Commented [CJF294]: Animation isn't overbearing

P5 = Did you reduce the amount of animation from the last time or has it been the same the whole way?

R = This is the same. I did do one change which is that it waits for you to stop playing before it does it.

P5 = Okay

R = Yeah that's nice

P5 = Because... I notice it but I don't find it annoying. Before I found it really annoying.

R = yeah

Commented [CJF295]: Animation out of the way as playback was less annoying

P5 = But maybe... like... cause we have them on the side, why do we need them on the top as well?

R = Just to space around incase you wanted to drag in a blank one. These ones are normally suggestions. I could remove them I suppose. But when you start out you don't have to... but I don't know, maybe that's a good idea.

P6 = I think yeah... I mean having two sets of them isn't really neccesarry.

P5 = Because these ones are blank aswell aren't they?

R = Yep. So that should work fine.

Commented [CJF296]: 1 set could help with busy-ness

P6 = Yeah cause they are originally blank aren't they

R = Start out with blank at the beginning and then

P5 = Yea::::h.

R = Okay, so this is a question about your composition process so you might like to... I guess you were kind of testing it when you were writing your piece. At what points did you reflect, right, so... if I had recorded you and I was playing it back and I said pause the video when you reflect, right? What moments do you think they might be?

P6 = I think they were like when we were playing them. Like after we played them took a second just to like think oh what should we do next or like how do you feel abt it, do you like it or not?

Commented [CJF297]: Reflection after playback

P5 = I think like, yeah, when we played it altogether that's when I, like, need it to be broken down to reflect on what's going on, because it's a lot. Because the sound is playing at the same time, so that's when I go, can we play them separately or more individually. Like the actual blocks... so that's...

Commented [CJF298]: Needed to break down to reflect when everything was played at once

R = And these play buttons as ways of doing that seems to be working for you?

P5 = Yeah, it's good

R = See the other thing I had from before was mute buttons. But I removed them cause I realised people didn't really use them. Cause that'd be the other option is you take away these and I just start muting stuff...

P6 = I think that's just so overcomplicated though

Commented [CJF299]: Muting might be complicated

R = Yeah

P6 = That's so many more things to do

P5 = Yeah

R = Okay.

P6 = I feel like the colours bother me less now, now the labels, I don't know why=

P5=Now they're labelled, oh like the instruments,

P6 = Now there is instruments the colours bother me less

P5 = Yeah they're fine. |

Commented [CJF300]: Instruments make sense now labelled

R = Umm yeah, any suggestions on how to design that abit better, because I just put symbols in, and these are the icons.

P6 = Umm... I think they're alright. I think just making them abit more uniform... but then they look decent.

R = I eyeballed it...

P6 = Yeah...

P5 = Is that, what instrument are they?

R = So it is, clarinet, cello and piano. And the reason I picked that is because I looked for different trios because I had three and it's one of the trios where I thought that the instruments were distinct enough that you wouldn't be like "they sound the same" or whatever, but... up for any suggestions..

P5, P6 = Drums.

P5 = Yeah Drums 100%. I think the Drums are compete yeah

P6 = Playing like the iconic instruments...

R = Yeah, do I do like drums guitar and bass you know

P5, P6 = Yeah |

Commented [CJF301]: Rock band kit favoured

P5 = That makes sense

R = So... talk to me about how this one (cello) sounded

P5 = how it sounded?

P6 = its very deep. It sounded.... you said it sounded like a voice.

P5 = Yeah I thought it was someone's voice

P6 = Its not very like overbearing like compared to the over ones but when you hear it on its own you kind of hear how deep it is

P5 = I kind of like it though

R = So if I go, play that one. Right, fine... if I play this here... right... so it's a couple of octaves down. Did that go weird or was it just... what was your?

P5 = In the begging in it was weird but I like it

R = It fits the music

P5 = It's very unique I'd say...

R = Unique?

((laughter))

R = But did it throw you off?

P5 = Ummm... slightly yeah. I mean that's the one we played with the most I think.

P6 = Yeah. I think it threw us off but it was expected almost, because you need a deep one aswell so it was like necessary but it sounds weird.

P5 = Yeah, a good weird.

R = Okay....

P5 = Oh did you change the sizes (of the play buttons)? That's bigger than those.

R = Yep

P5 = I like it

P6 = Yeah

R = The only thing I didn't do was try and un-sweet it because I ran out of colours. I think I did all the other changes addressed. Anything to make it polished or and final touches, and also anything really crazy that you just want to try and see happen, because why not.... so... lets do it... I'll give you some time to think about it and then I'll ask both those questions. Crazy and polish.

Commented [CJF302]: Lower 8ve for bass might have been weird at first

P6 = What do you want it to look like, ideally? Like if you had like, you could just, without any of your coding nothing like on the next day you could just make it look like how you want it.

P5 = Do you think about it on your coding abilities or.... ?

R = Nooo... no because my coding is... pretty good. ((laughing)) That sounds really arrogant but... I think in the study of like doing these iterative designs I am limited by what I've been able to do between things, whereas if I'd done stuff like paper prototypes and drawings then I maybe could have come up with cleverer things. But at the same time then suggestions wouldn't have been on actual interactions so its... you know... . Umm...

P6 = Do you like how it looks?

R = Yeah I think so. It instr- I don't everything I've done is other people's suggests so its not

P5 = it's not your own like...

R = No... I can show you where I come from after we've recorded stuff. Umm.. but I think it works well.

P5 = Do you think in the end it should stay black? Like this sort of thing, like this colour?

P6 = Yeah I like the colour but, I dunno...

R = I think that's where...

P5 = I think it's just a bit dark right now but its not

Commented [CJF303]: A bit dark

R = Were talking about... yeah.... polish and I think that'd be it yeah... but I don't... keep trying with hex pickers.

P5 = You're good with colours. You always do a like a colour figure thing.

P6 = But usually whilst users... what's that

P5 = is that a thing that does loads

P6 = Is that adobe? Its not adobe but it creates a colour wheels for you or like colour charts for you so, for when we had to make a website...

R = Yeah

P5 = Yeah yeah... well there wasn't one where it had like three and it matches them

P6 = Yeah so, we picked colours – basically we were doing food. So we picked like oranges and yellows because like the colours like attract thingy. So for music... have you searched up like what colours?

R = No but if you look at like... this is logic which is the same, kind of this... grey kind of blues.

P6 = I think you said blue.

R = Yeah blue might... what I found tricky though...

P5 = That's green's weird

Commented [CJF304]: Green is weird

R = Was having like three colours.

R6 = What like the greys?

R = Or even like any... how do you have three different colours cause that can get instantly like... yeah.

P6 = See in my head – and this is just me – I feel like blue purple and red are like cool colours. Like if those were your favourite colours then you are like a cool person.

R = Yeah

P6 = So that what I just base music on...

R = And also I'm trying to get, this like one for yellow because the highlighting is yellow but its like another colour, right, and then... the red line... it just seems to be, I don't know why... it just kinda like...

Commented [CJF305]: Cool people colours

P5 = It makes sense

R = But maybe, yeah, like blues purples and reds

P5 = Maybe... as well, the colour you associate with the instrument because like, for example, you know like, there was also the baseline subject that like maths would be that colour and English would be that colour

P6 = Oh yeah like maths is blue and English is red something like that

R = So if I did a rock band what colours would drums guitar and bass be...

((laughs))

P6 = I feel like pink suits piano, like when I think of piano I also think of pink. And when I think of cello I think of like navy blue. And a flute I think of...

Commented [CJF306]: Colours to instruments vibe e.g. pink piano, blue cello

P5 = A guitar I think of orange

P6 = Orange, I agree.

P5 = Yeah. And drums...

R = A drum gives me purple vibes

P5 = It's giving me red

P6 = But a flute gives me like very cute vibes... like very like fairyland

R = Yeah

P5 = But yeah that's colours suggestions

R = Yeah

P6 = So what are the vibes of the colour. And I feel like having a very neutral background

P5 = It helps

P6 = Its gonna allow you to do whatever you want with the colours, to be honest.

Commented [CJF307]: Neutral background helpful

R = I think it will be the sort of grey thing...

P6 = Like and your target is for like what, a lot older

R = Yeah so, it's going to be for a study, right, so I want it to look flash enough that all the feedback I get is on like... that it looks like loads of sweets

P5, P6: Yeah

((laugher)))

P5 = Ummm.... how else can you polish it?

R = I dunno. I've kind of got these curved edges?

P6 = Oh yeah... I remember thinking about that... yeah how does that... what was the purpose?

R = Ummm.... I ended up having coloured patterns in here and I looked at it and I though oh my god that looks terrifying, right, everything is really angular and so I thought I need to make it look less scary, so I just tried to make it cuter by rounding everything basically.

P5 = I think the puzzle pieces are cute, so then, if those were sharp, I don't know what those would look like. Maybe you could try that and just see... .

R = Yeah.

P6 = I also feel like sharpness does give like a polished feeling.

Commented [CJF308]: Sharp edges might seem more polished

R = The other thing is I have no outlines on things

P5 = Yeah... oh I love outlines.

R = so I could add like a border, but I don't know what colour I'd put the border in and then I feel like I would get

P6 = Yeah, I feel that's even more colours

Commented [CJF309]: More colours = confusing

R = confused, yeah.

Commented [CJF310]: Outlines good

P6 = It's hard. Yeah.

P5, P6 = Ummm

P5 = what else is there?

P6 = You should have a light or dark mode? I love light and dark modes.

R = Yeah.

P6 = Because you then have your light colours and then your dark colours.

R = Yep.

Commented [CJF311]: Light dark mode

P6 = That gives you like stuff to fill up the area with aswell, like random buttons

P5 = How come the puzzle pieces, oh is that the roundness, of the shape is like round, because it made it more scary?

R = Yeah, it also ummm... you can get... it kind of looks abit like this when its connected together, or something like that right which – the connection is less obvious. When it's kind of curved you can kind of tell, is one thing, because it can be quite tricky to make... you see where even the join there is like you can't really see it, but you could grab like and click.

P5 = Oh okay.

P6 = That's interesting

R = But maybe some outlining would be...



P6 = Maybe. If you just have like a default set of colours you should be set.

R = Maybe I should whip up a colour pallet and we should pick a nice pallet of colours?

Commented [CJF312]: Work with a default colour set

P5 = Yeah, what's it called

P6 = Adobe colour picker, there is adobe colour pallette.

R = Okay, let me finish the interview bit and then we could just play around. Umm.... I think that's everything. We talked about the new bits and stuff, and talked about reflection with these play buttons

P6 = I like the play buttons

R = And we discussed that like muting stuff wouldn't be very good and that curves might get kind of crazy. Did you still like the initial curves that come out to the side?

P6 = Yeh

P5 = What initial curves?

R = Like... it's not showing it right now but

P5 = Oh yeah yeah yeah those ones... yep.

R = There we go so. Unless any final comments.

P5 = I was gonna say actually I dunno... you know the top bar.

R = Yep

R5 = I remember saying if it was more like...

P6 = Like the spotify thing...

R = A circle

P5 = Yeah... or like even this bit

P6 = Like even skinnier

P5 = Like if it was like skinny

R = Oh so like a little skinny thin line, yeah yeah yeah.

P6 = Yeah I think that's... Cause I think like that gives the slickness but make it like curves slicker. I think that's kind of what is lacking is slickness.

Commented [CJF313]: Skinny, slick spotify bar

R = Yep

P6 = I feel like having that would be like automatically make you like redesign but alter the other bits as well to fit that aesthetic.

R = Oh you'd hope I have that sort of intuition.

((laughing))

P6 = Yeah, but I don't think there is anything else.

P5 = If you change it to that what would the rest of it change to...

P6 = I dunno I feel like the puzzles are a bit so they kind of set the tone for everything else.. cause like, you don't want to change them either. I dunno.

R = Something to play around with anyway.

instruments	Like new instruments
	Instruments more enjoyable
	Likes arrows
	Colours make sense
	Highlighting helped clarity
	Rock band kit favoured
	Instruments make sense now labelled
	Lower 8ve for bass might have been weird at first
timelines	Buttons for timelines should not use top bar
busyness	Smaller individual playhead lines
	Muting might be complicated
	Flashing noticed but not huge
	Now used to the flashing != behaviour change
	Flashing less complicated
	More curves = busy screen
avoid busyness	More colours = confusing
	1 set could help with busy-ness
	Organisation helps busy-ness
	Animation isn't overbearing
reflection	Animation out of the way as playback was less annoying
	Reflection after playback

	Needed to break down to reflect when everything was played at once
colour	Work with a default colour set
	Abit dark
	Green is weird
	Cool people colours
	Colours to instruments vibe e.g. pink piano, blue cello
	Neutral background helpful
details	Outlines good
	Neutral background helpful
	Light dark mode
	Skinny, slik spotify bar

## Session 12

**R** = Okay. First impressions? What do you want to tell me?

**P5** = It looks much better.

**P6** = It looks nice, I like the colour.

**P5** = Much more easier on the eyes.

**P6** = Yep easier on the eyes.

**P5** = It is. The colours are really nice. I like the purple.

Commented [CJF314]: Colour easier on the eyes

**P6** = Yeah

**R** = Cool.

**P5** = Oh and the instruments change

**P6** = Oh yeah I like the, yeah, the bass was a nice addition

Yep. Umm... okay cool. Like the colours, the instrument change is nice. Umm... talk about the drums for me...

**P6** = The drums were good I like the like the... sounds. I dunno... they were like different parts of the drums weren't they.

Commented [CJF315]: Instrument change was nice

**R** = Yeah

P6 = Which is quite nice.

R = Yeah, did you find anything like...

P5 = I mean I wasn't expecting it. I thought it was gonna be like the same with the other two

P6 = With the high going higher

P5 = Yeah but

P6 = But the different sounds were quite nice

R = Did you figure out what they were? Was there any challenges to using it?

P5 = Umm...

P6 = I think once we did the ascending we realising this was making this sound and this was making this sound type of thing.

Commented [CJF316]: Ascending to figure out drums

P5 = Yeah like initially we didn't

P6 = Yeah, we were quite confused I'd say, but after that we were okay.

P5 = Yeah but it takes time to figure it out, which I think is interesting.

P6 = I think it's part of like using it I guess.

Commented [CJF317]: Drums took time to figure out but not negative for the user experience

R = Yep, I think it... I don't wanna put words in your mouth. I think the drums were fun maybe?

P5, P6 = Yeah

P6 = They sounded the best as well like with the bass. The bass and drums sounded really good. That [the guitar] was alright.

Commented [CJF318]: Drums complemented other instruments

R = Okay. I made the bar skinny, any comment on the design of the skinny bar.

P5 = I mean, I don't remember last week's one but this was much better.

P6 = I like it yeah. And before did the play button go into a pause button aswell or did it change that. So, when you pause it is like a red square... like the red one.

R = Yeah that was there but if you notice it and like it then great.

P6 = Yeah I noticed it just then.

R = Okay let's talk icons.

**P6** = I like the icons. Did you draw these yourself?

**R** = No.

**P5** = I was confused because they look very similar.

**R** = Yep, so... ones a guitar, ones a bass. Problem is they both look the same, right?

Commented [CJF319]: Icons same

**P5** = I wouldn't know how you'd know.

**R** = Umm... so I went for. This is like... that's your treble clef and bass clef. So in music that has a meaning, but I guess as non-musicians they are just weird symbols.

**P5, P6** = Yeah

**R** = So how would you indicate high pitch, low pitch.

**P6** = I mean you could do like words.

Commented [CJF320]: Words understandable to novice

**R** = Words, yeah I suppose. I'm trying to avoid words though – I'm not sure why.

**P6** = Yeah.

**R** = Umm...

**P5** = Do what... guitars... and they look exactly the same?

**R** = Well kind of yeah.

**P5** = Really?

**R** = Well basically yeah. One would be longer, but I think as like an icon... you know what I mean. You can't really tell.

**P6** = Maybe just having, switch out the guitar for something else. Maybe bring back the flute?

**R** = Would that not be abit strange in a... guitar, bass thing?

**P6** = What goes with a drum and guitar? Hmm...

Commented [CJF321]: Could switch out guitar

**R** = A voice?

**P5** = You had a violin in there, once?

**R** = Yeah, you can do any instrument?

**P6** = It'd be like what's that man... clean bandit.

**R5** = Clean bandit!?

Commented [CJF322]: Flute like clean bandit

**P6** = One of them's... it'll work. But I think just changing the guitar out for something else would be an easier switch.

**P5** = Yep

**R** = Yeah. Okay. I wrote down, bugs and then play bar.

**P6** = Bugs? Oh...

**R** = This thing floating out to the side right. I guess that's not supposed to...

**P5, P6** = Yeah.

**R** = Umm...

**P5** = That's all within the code is it not so...

**R** = Yeah, that's just how it works. Umm... so I think its one of these weird things were the idea is that I give to people for the first time and they use it, right? So... when you were first using... like in the first sessions... did you ever get this long in what you were writing?

**P5** = Yeah... yeah... I dunno if you remember – but I vividly remember saying – that I tested to see how far it'd go and the screen actually kept moving.

Commented [CJF323]: People likely test moving off screen

**R** = Right okay, yeah yeah yeah yeah. Okay, So I might have to=

**P5** = cut it off

**R** = Yeah, either not allow it or umm... yeah.

**P5** = somehow let it

**P6** = can't you have it like move within here, so like this kind of moves.

Commented [CJF324]: Might need to limit the number of blocks in a row

**R** = Yeah, you can do like a scrollbar at the bottom type thing, maybe?

**P6** = Yeah. Or so like when it moves as this moves so nothing is like leaving this premises. You have so much empty space at the bottom anyway

**R** = The other thing I could do it be like...

**P6** = Fives the limit

**R** = Yeah. Put a limit on it and then it comes up and says... but maybe that's not great for professional music. I mean its not for professional music but like I think for the study that might be

**P6** = Yeah

**R** = It's a boring way to do it but I'll still get what I need from it maybe.. I don't know.

**P6** = I'd just leave it

**R** = Yeah. Or would that greatly disappoint you

**P5** = what? If you cut it off?

**R** = yeah

**P5** = It'd be cooler if you did the thingy but... you might not have time for.

**R** = Yeah... lets not worry about time because I'm going to do this but...

**P5** = Yeah cutting off might be...

**R** = Do you think if I had cut it off there, that you would have spent more time thinking about the notes because you...

**P5** = Yeah

**P6** = Yeah

**R** = ...wouldn't be able to block them? Okay.

**P5** = You try something the best with what you've got.

**P6** = Yeah.

**R** = Okay. Umm... so at one point, I think it was this note here, one of you said something like

**P5** = was it missing...

**R** = maybe one of you said something like put another one here?

**P6** = Yeah

**R** = and I'm wondering why?

P6 = because that was empty and that was a gap so all of them... none of them had something here so it was just silent.

R = And was there a reason you picked the sort of lowest pitch and not like any of the others...

P6 = That was just...

P5 = That was trying it out.

Commented [CJF325]: Just trying out sections

P6 = Yeah. I don't think there was any thought process behind that bit.

R = Cause there was another point where you said somethings wrong here...

P5 = Yeah... you said it sounds fine...

P6 = Yeah.. I quite liked it

P5 = I kept saying that the whole middle section sounds wrong

P6 = I dunno... I thought it was quite alright...

P5 = I kept wanting to fix it.

R = I wonder, why did you pick that bit sounding wrong?

P5 = It just didn't sound nice to me... clearly...

P6 = I was vibing with it, I thought, that was nice. I think that's just like, acquired test.

Commented [CJF326]: Middle sounding not quite right

R = Yeah. But also, I guess that's – so linking that back to reflection somehow – could you do that? Could you link it to reflection?

P5 = Umm...

P6 = Maybe because the start of it was more consistent like there was a lot of sounds and then from nowhere it went quite, I felt we focused like a lot on those two, and then after that we were just relying on the AI.

Commented [CJF327]: Relying on Ai afterwards

R = Yep, okay.

P6 = And some of it was quite, was more empty than others, so like as it goes on it gets more emptier. Like that was also like, oh lets add more, it sounds really empty.

R = Yep



**P5** = I think also like when you're composing it you tend to pay more attention to the beginning and end rather than the middle. When you think about it, or for me personally. But yeah, so at the beginning, that is what we had initially. But in the middle we had a great song, and then in the middle we just chucked everything in.

**Commented [CJF328]:** Composing pay attention to beginning

**Commented [CJF329]:** Middle just AI being chucked in

**R** = Yeah

**P5** = And that's when you listen to it and your like... okay.

**P6** = I think the beginning was when we did most of the experimenting ourselves without relying on the AI.

**Commented [CJF330]:** Experimenting at the start

**R** = Yep

**P6** = And then after that it was just whatever came up we just picked.

**R** = So you think the AI made you do less experimenting or trying stuff?

**Commented [CJF331]:** AI perhaps less experimenting

**P5** = Yeah

**P6** = Yeah

**R** = Okay. At one point you were looking at blocks and you were like... "I don't know if that was us"

**P5** = oh that was you (P6)

**R** = Umm... do you want to talk about that?

**P6** = Oh what did I say?

**R** = So I guess what I'm getting at is... there's no indicators of like... did the AI make this or did you make it?

**P5** = I think there might have been a block and you were like, did we put that there?

**P6** = Yeah, I think it was overlapping or something at one point and it was playing the one behind. Or even, when I was ... like the one ontop of it I used and it cleared the one behind, so I was like... oh what's happening.

**P5** = That's a good point. Yeah... like there is no distinction whether it is like if the AI produced the block or if we did it.

**R** = Would it be helpful?

**P6** = I mean, I don't think it's even necessary because it's still playing sounds but if you wanted to – I mean it could be abit helpful be it differentiating between the two. But... I don't think it's that necessary.

**P5** = Yeah. Not sure.

**R** = So do you feel like, you've made a piece now like. How much do you feel like is your music and how much do you feel is the computers music?

**P5** = I feel like 20% mine

Commented [CJF332]: Mostly AI music

**P6** = Yeah. I feel like I made one block and they made the rest.

**P5** = Yeah.

**R** = And does that... how do you feel about that?

**P6** = I mean it sounds great to me. I feel lucky.

Commented [CJF333]: Luck about AI

**P5** = I feel, if I had more time, if I was genuinely using this, I would... do it more myself and use what was given to better it. I mean... I felt personally great when the bit I made was sounding nice. And the bit that they did, you kind of know its going to sound okay. So its kind of a... underwhelming on your part. Because you don't participate

Commented [CJF334]: Ai hinders participation

**P6** = I think it almost limits the interaction with it itself. Cause we, and I stopped giving like trying to do "oh shall we put this one on"

**P5** = Yeah you stop trying kinda,

**P6** = Yeah you just kinda rely on the AI

**R** = So would you say like.. if you said it like in terms of motivation was it... did it demotivate you to not bother trying to write your own blocks?

**P5** = yeah...

**P6** = yeah, it's like done for us, why do we have to try?

Commented [CJF335]: AI stopped motivaton

**P5** = (laughing) yeah.

**P6** = And it even comes into the screen for us aswell. (laughing)

**R** = If... the music was really bad that the Ai made. Would that make you feel better about the... your own music, maybe?

**P6** = Yeah.. I think that would make you go back and correct it

Commented [CJF336]: Bad music would encourage corrections

P5 = Yeah, I think that would be cool though. Yeah, you'd want to go fix it and reflect.

P6 = Like, where's the mistake.

P5 = Yeah.

P5 = That is... cool... yeah...

P6 = It's almost like a game. It's like oh which note is missing like... listen to it again

Commented [CJF337]: Could be like a game

R = Yeah. Okay. At one point, you were humming.

P5 = Yeah.

P6 = Yeah, I was trying to make Mary has a little lamb.

R = So what were you trying to do when you were humming?

P6 = So basically, you know how Mary has a little lamb has this bit that goes up and down.

R = Yep.

P6 = I was like okay, knowing that his goes up like higher, like I have to go higher like it follows on as I was going.

R = So where you like.. trying to match the...

P6 = yeah yeah.

Commented [CJF338]: Humming to match tunes

R = Okay... umm... this is interesting right. At this point, you thought okay let's make it a full ascending thing. Why?

P5 = Umm... it started with the drums to see... distinguish what each level was. And then we were like okay... we knew the guitar and bass would not be the same thing because it's just, it goes up in... what was it pitch?

Commented [CJF339]: Testing drums systematically

R = Yeah yeah...

P5 = Umm... But it was just like... why don't we actually just have a listen to see..

P6 = see how it sounds

P5 = cover all grounds... see what we're working with. And then, the reason I would say is just so that if you play it if would nice.

R = Yeah.

**P5** = yeah. That was the thought process...

**R** = Okay. I think that is mostly all the things. Umm...

**P5** = Are you going to change anything, going forward?

**R** = Yeah. Whatever suggestions you have... umm....

**P5** = I dunno. I feel like, it's come along way since the first time like...

**P6** = Yeah. It's very like standstill now because I don't know what you would change.

**R** = I found that, doing the other sessions actually when you get to about four everyone hits

**P5** = A point where... yeah

**R** = it's like saturation right where everyone... because I've done everyone's ideas and they are like, yes. They're not going to be like "actually my idea was bad" – do you know what I mean? Umm... I think we should talk about colours abit. So, I did the whole cyber wave thing.

**P6** = It's nice.

**R** = I think its okay.

**P5** = Yeah, it's better than what it was.

**P6** = I think the darkness makes it nicer.

**R** = Yep. Ummm... Okay lets quickly go... the curves that flash in and out. Did they annoy you much?

**P6** = Umm... I think, not the curves. The icon themselves annoys me more.

**R** = As in the puzzle pieces or the little plays.

**P6** = No, The puzzle pieces... yeah... because I think, some of them were moving around but it's just the overlapping. Like, in my head it's just so busy it's making me not really think about it. Its like too much to look at at one time.

Commented [CJF340]: Can be busy

**R** = Yeah yeah yeah yeah.

**P6** = Ummm... could we have like an option to change the sound?

**R** = Yeah I could do. I think for the purposes I'm doing it, you know so a once off study so I don't want to give them too much. Umm... also things like we talked about light mode dark mode

**P5, P6** = Yep.

**R** = But I thought that was a whole extra... yeah

**P5** = Uh, for the curves, is there a reason like it, uhhh... I just saw it pop up. It points to each single one like that.

**R** = Umm... there is no particular reason, I just thought it would be cool.

**P5** = cause its

**R** = I guess that's busy

**P5** = yeah cause that's a lot of lines

**P6** = yeah and they are all just like

**P5** = which is crazy. Like when it came up when we were going it, I chose to ignore it because it was...

**P6** = I didn't know where to go.

**P5** = yeah I feel like it was information overload. It was so much

Commented [CJF341]: Too much stuff

**R** = Yep.

**P5** = Yeah. So maybe somehow reduce the lines because it all comes back to one

**R** = Yeah. Yeah... . Okay. Let's play our music one last time.

[Plays each other's music].

human-AI comp process	Humming to match tunes
	Just trying out sections
	Composing pay attention to beginning
	Middle sounding not quite right
	Relying on Ai afterwards
	Middle just AI being chuckled in
	Experimenting at the start
human-AI UX	Luck about AI
	AI hinders participation

	AI stopped motivaton
	Bad music would encourage corrections
	AI perhaps less experimenting
	Mostly AI music
	Could be like a game
as study tool	People likely test moving off screen
	Might need to limit the number of blocks in a row
drum UX	Drums took time to figure out but not negative for the user experience
	Ascending to figure out drums
	Testing drums systematically
business	Can be busy
	Too much stuff
usability	Icons same
	Words understandable to novice
	Could switch out guitar
	Colour easier on the eyes
instruments	Instrument change was nice
	Flute like clean bandit
	Drums complemented other instruments