

1	Interviewer	Good afternoon. Thank you for joining me today I really appreciate it. I'm going to ask some questions and I would appreciate your honesty. I found that if teachers are honest and they share their real experiences uhm it will be valuable. Okay, so my first question is what is your understanding of colour vision deficiency that is often referred to as colour-blindness?
3	Participant 3	My understanding of colour-blindness uhm normally or more often seen with men than with women and mainly the blue-green and orange-red combinations, as far as I can remember.
5	Interviewer	Thank you. Tell me about your experiences of teaching learners who are colour-blind.
7	Participant 3	Uhm, I cannot remember teaching any person with colour-blindness.
9	Interviewer	Sjo, that's interesting.
11	Participant 3	Maybe they were there but never mentioned that they are colour-blind and then I never knew that I taught learners with colour-blindness.
13	Interviewer	That's quite interesting. So tell me more about how you use colour when teaching and how is colour also involved in after-school activities at your school.
15	Participant 3	Uhm, normally we encourage teachers to make use of colour mainly uhm because of uhm keeping learners attention uhm and then with different colours you can actually remember things because you make it colour specific and then also the the effect of different colours on the emotional state of learners.
17	Interviewer	That's quite interesting. So are you saying that uhm colour helps children to remember the content and it's also used to highlight work in the classroom?
19	Participant 3	Yes, definitely.
21	Interviewer	Okay, uhm how is colour used in the resources used for learning such as textbooks and posters?
23	Participant 3	I think the the brightness that that it brings in for black and white although grey sometimes battle to distinguish between different objects at the moment you've got different colours uhm, you see it better uhm it brings a quicker understanding of uhm what is covered in the textbook. So definitely the the colour,the colourful text books especially in my subject we work with science and also cover topics like light uhm electromagnetic force, ultraviolet, infrared, etc etc. Is a lot of colour in textbooks were it uhm it helps the learner to understand specifically when you refer to colour then you cannot work with black and white photos or pictures in textbooks.
25	Interviewer	So uhm just to clarify are you teaching physical science and at what level?
27	Participant 3	Yes, I taught physical science now for 15 years and up to matric level.
29	Interviewer	Up to matric level. And you say the use of colour in textbooks is making it easier to explain specific concepts to learners for example uhm, how light goes through a prism or uhm different colours used for experiments and in that sort, do I understand you correctly?
31	Participant 3	Yes, yes definitely. Uhm, also in chemistry we have the different substances where uhm some properties of certain substances are related to them.
33	Interviewer	Okay, that's quite interesting.
35	Participant 3	To identify substances through colour as well.
37	Interviewer	So in your subject colour actually plays an important role to convey information.
39	Participant 3	Yes, yes.
41	Interviewer	Okay. Tell me in after-school activities at your school how is colour used there?
43	Participant 3	Uhm the same in class because the after-school classes take place in the same classes. So you've got the different posters against the walls, you make use of whiteboard markers to teach or uhm if you are privileged to have electronic board. Even with a projector, projecting images on a whiteboard we can use colour. Uhm I say it's more or less the same than in the normal classes after schools making use of the same technology.
45	Interviewer	So is technology used at your school, are there projectors available?
47	Participant 3	Yes, definitely.
49	Interviewer	And uhm then often with these projectors, is the images used in colour? Do I understand correctly?
51	Participant 3	Yes.

2:1 My un...	Awareness
	Understanding

2:2...	Working with learners w...olour blind/ experience
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2:3 M...	Awareness
	Working with learners w...olour blind/ experience

2:4 normally we en...	physical barriers in scholastic resources	2:10 normally we e...	Colour perceptions
	use of colour during instruction		

2:5 I think the the brightness that that...	Colour perceptions by teachers
	physical barriers in scholastic resources
	use of colour during instruction

2:6 Iso In...	physical barriers in scholastic resources
	use of colour during instruction

2:7 Uhm the same in clas...	physical barriers in scholastic resources
	use of colour during instruction

2:8 So is...	physical barriers in scholastic resources
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53	Interviewer	Okay. And then after-school activities such as sports or culture activities how is colour used there?
55	Participant 3	In some school or extra-mural activities, they use colour. Like we've got archery at school, the targets different colours. Uhm and then, well most other sports making use of like cricket got the red ball and hockey's got a white ball uhm with tennis we work with yellow balls but that's more sports specific. But uhm what I found is that when when learners can dress in uhm brighter colours then uhm it's it's got a positive impact on their uhm performance.
57	Interviewer	Mmm, tell me more about that.
59	Participant 3	Just to feel like a team everybody's dressing the same and if it's only white or grey so then it doesn't look good. If you look good, you feel good, you play better.
61	Interviewer	Okay, so a specific team would then wear a specific colour. And the whole team would wear that colour, and you're saying this has then an influence on their emotional performance and their performance doing the specific activity?
63	Participant 3	Ja.
65	Interviewer	That's so interesting thank you. According to you which challenges are faced by learners who are colour-blind within the school context?
67	Participant 3	Uhm, especially in in my subject now if you have to identify certain colours and and you can't, then it will uhm be a problem. Then you'll have to divert and use other methods to do the exact same thing.
69	Interviewer	Can you give me a practical example.
71	Participant 3	If you have to identify substances uhm when you do uhm chemical chemistry in chemistry experiments. We have to use sulphur for instance. Sulphur is bright yellow. Uhm but if you want to identify it as a colour-blind person I think it won't be a problem in future to identify the same because they have seen it. Although it doesn't seem yellow to you, you know exactly know what to expect.
74	Interviewer	Do you think children might get confused between uhm I know, for example of experiments the colour sometimes changes in an experiment and that gives you an indication of maybe the pH balance or or other other things. Do you think a child that has challenges with colour-blindness might find it difficult to identify the colour and therefore difficult to describe what happened in that specific experiment?
76	Participant 3	Yeah, definitely. Definitely it is a challenge.
78	Interviewer	Is there other uhm places in your subject where colour is often used where it may also be a challenge?
80	Participant 3	Uhm, no, only when you make it colourful for learners to understand better and then refer to certain colours then the colour-blind person will have a problem because they won't be able to identify the colours.
82	Interviewer	That's quite interesting. So uhm you saying when you, when you teach children you make use of different colours. How do you do that? Do you use different colours on the whiteboard or do you use different colours during projection, lecture when you use the projector or how is that done?
84	Participant 3	Even with PowerPoint presentations and then of course when I do whiteboard, whiteboard markers they use different colours. Definitely. Uhm, because uhm only blue or only black uhm gets boring. So you attract the the learners attention by making use of a different colour uhm to explain different things.
86	Interviewer	Okay, so on your board you would have different things, or or different steps in different colours, so that they know, okay, now look at the blue now look at the green, for example something in that sense.
88	Participant 3	Yes.
90	Interviewer	Okay, so how can schools accommodate learners who are colour-blind within the school system? Uhm if you can please maybe provide me with some practical examples or suggestions. I would appreciate it.

2:9 In some school or ext...	Colour perceptions by teachers
	Emotional/ social impact

2:11 Just...	Colour perceptions by teachers
	physical barriers in scholastic resources

2:12 espe...	physical barriers in scholastic resources
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2:13 if you have to ide...	Accommodate learners who are colour blind
	physical barriers in scholastic resources

2:14 only wh...	Colour perceptions by teachers
	physical barriers in scholastic resources

2:15 Even with...	Challenges for learners who are CVD
	Colour perceptions by teachers
	physical barriers in scholastic resources
	use of colour during instruction

92	Participant 3	I think in the first place they must be identified. So like I've told you earlier, maybe I taught a lot of colour-blind people and I never knew that they are colour-blind. So identification of the colour-blind learners I think is the important thing. And then when that learner is in class, I would then like to in the first place know it and then maybe get some training on how to help them, because I think most teachers, even myself, when I did my teacher training, there was no specific training for teaching colour-blind children. So uhm I will put that person in front in the class so that I can remember this person, and that I can give extra attention and speak to that person uhm with a softer voice so that that it's not necessary to disturb the whole class when I speak to that specific person. That's why I want the learner close to me. And then just to make sure that he understands he's got an alternative way of explaining the same thing not using colour. And then also I think we have to identify the type of colour-blindness of how severe it is, so that you know not to make an issue where there is no issue.
94	Interviewer	Okay, so when you saying identify the severity, let's say it's a specific type of colour-blindness, for example red-green will that impact the way you teach or the colours you use on the board? What would that impact?
96	Participant 3	I don't think it will impact my teaching. I will still make use of the same teaching methods using colour. But then I will give special attention to that one person in the class or two that are colour-blind, and then uhm making use of alternative methods with them.
98	Interviewer	Mmm, what would be alternative methods that you would use?
100	Participant 3	Instead of colour then you know use thicker and thinner lines. Uhm I don't know. Use other colours that that that person doesn't have a problem with because if I know it's blue-green then I will maybe in class try and revert from blue-green and then use either blue or green and other colours. So that they doesn't have to distinguish between the blue and the green. So just block out one colour if you can and use less colours to accommodate that person then.
102	Interviewer	To limit the spectrum of colours used colours that child is able to differentiate.
104	Participant 3	Yes.
106	Interviewer	Okay thank you for that. My last question is how can teachers be supported to better accommodate learners who are colour-blind?
108	Participant 3	Uhm, I think they they must be aware of the fact that we have a number of children that normally have that problem because you know at the moment I don't know what is the tendency, what is percentages you know. I think with your research, you will be in a better position to to give an answer to that. How often you get colour-blind learners in your class, is it only one per school? Is it maybe one per grade or one per class? So if you make them aware that this problem uhm appears more often than what we thought, then they will be more alert. That then secondly, definitely I think they need training uhm to give more solutions than what you and I have spoken about today.
110	Interviewer	Okay, so first of all raising awareness, and then second of all specific training that is focused on how to accommodate that learner in the classroom and how to teach in a more inclusive manner. Do I understand you correctly?
112	Participant 3	Yes.
114	Interviewer	So thank you so much for your time. Is there anything else you would like to add?
116	Participant 3	No, not at this stage.
118	Interviewer	Thank you so much. I appreciate it.

2:16 I think in the first place they must be identified. So like I've tol...	Accommodate learners who are colour blind
	Awareness
	Becoming aware of learners who are colour blind
	Learner support
	Teacher support (training)

2:17 I don't thin...	Accommodate learners who are colour blind
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2:1...	Accommodate learners who are colour blind
	Learner support

2:19 Use other colours th...	Accommodate learr
	Learner support

2:20 Uhm, I think they they must be awar...	Awareness
	Teacher support (training)
	Working with learners w...olour blind/ experience