

Supplemental Digital Content 2. Complete coding sheet with participant excerpts

Main categories	Generic categories	Codes	Participant excerpts
Positive aspects of VR simulation	Informative, enjoyable, and easy way to learn	• Informative	<i>"Informative"</i> (P28, P31) <i>"Clicking on all the items and learning about all the information that popped up"</i> (P22)
		• Educational	<i>"Educational"</i> (P18) <i>"I think I could learn a lot"</i> (P14) <i>"Gained valuable knowledge in your field of study"</i> (P1)
		• Enjoyable and fun to use	<i>"Enjoyable way to learn and assess skills"</i> (P7) <i>"Enjoyed [the] experience"</i> (P37) <i>"Very enjoyable"</i> (P8) <i>"It is very pleasant"</i> P14) <i>"It was overall fun to use"</i> (P3) <i>"I really enjoyed the experience"</i> (P2)
		• Beneficial for students	<i>"It would be beneficial for students to gain insight into the virtual reality simulation"</i> (P28)
		• Easy to use and learn	<i>"Easy to use"</i> (P28) <i>"Makes it easier to learn"</i> (P9) <i>"Easier to practice"</i> (P37)
		• Great and accessible opportunity to learn	<i>"Brilliant learning opportunity"</i> (P8) <i>"It'd be great learning opportunities"</i> (P15) <i>"I think I learned a lot from stimulation therefore, VR makes stimulation more accessible for me..."</i> (P15)
		• Clear	<i>"How clear it was"</i> (P24)
	Fostering self-directed learning without pressure	• Taking control/ being independent	<i>"From a learning point of view, it was good that the situation wasn't directed. You had to decide everything on your own without guidance which replicates what we have to do in hospital."</i> (P2) <i>"You could take full control in dealing with the patient"</i> (P4)
		• Self-directed learning	<i>"Facilitate learning by self-directive"</i> (P25)
		• Independent decision-making	<i>"For independence and clinical decision making"</i> (P6)
		• Less panicked	<i>"I found I was less panicked than doing in person simulations. I felt like I had time to think clearly."</i> (P21)

	<ul style="list-style-type: none"> Engaging without pressure 	<p><i>“Engaging full situation without the extreme pressure of practice of CSSRC [Clinical Skills Simulation Resource Centre]” (P30)</i></p> <p><i>“It’s better than jumping into placements. You get a better idea on what to do without the pressure.” (P5)</i></p>
	<ul style="list-style-type: none"> Not limited by lack of experience 	<p><i>“Not being limited by lack of familiarity with medical equipment” (P40)</i></p>
	<ul style="list-style-type: none"> Engaging with critical thinking 	<p><i>“It made you engage with critical thinking” (P3)</i></p>
Safe environment to experiment without causing harm	<ul style="list-style-type: none"> No fear of causing harm 	<p><i>“Integrated clinical setting without the fears of harming someone” (P1)</i></p>
	<ul style="list-style-type: none"> Experimenting instead of dealing with a patient 	<p><i>“I enjoyed the idea of being able to experiment instead of dealing with a real patient. I feel that it could definitely benefit nurses and other allied health professionals” (P26)</i></p>
	<ul style="list-style-type: none"> Safe way to practice nursing skills 	<p><i>“It is a very safe way to practice nursing skills” (P34)</i></p>
	<ul style="list-style-type: none"> Helping without being in the hospital 	<p><i>“Being able to practice helping a patient in a hospital setting without being in the actual hospital setting” (P19)</i></p>
Closeness to real-life situations	<ul style="list-style-type: none"> Similar to placement 	<p><i>“The scenario was very similar to what could happen in placement” (P24)</i></p>
	<ul style="list-style-type: none"> Real, lifelike, and accurate 	<p><i>“Lifelike” (P18)</i></p> <p><i>“Very lifelike” (P7)</i></p> <p><i>“I liked that it was very true to life, felt like I was experiencing a clinical situation” (P10)</i></p> <p><i>“Patients presenting have real life scenarios” (P28)</i></p> <p><i>“The real-life scenarios” (P13)</i></p> <p><i>“I think it brings things alive” (P25)</i></p> <p><i>“The accuracy of stimulation” (P36)</i></p> <p><i>“The realistic interaction. It was good to be able to talk to the patient and the other nurse as if you were in a clinical situation” (P2)</i></p>
Interactive and engaging technology	<ul style="list-style-type: none"> Very interactive 	<p><i>“The interaction with clients” (P41)</i></p> <p><i>“Very interactive” (P9)</i></p> <p><i>“It’s very interactive. The scenario changes as you do interact with the scenario and patient” (P15)</i></p> <p><i>“Very interactive rather than learning from a textbook” (P8)</i></p> <p><i>“Good to have an interaction with the patient rather than just practicing in class with each other” (P11)</i></p>

		• Being able to practice without moving	<i>"Being able to use different parts of the room without moving" (P12)</i>
		• Engaging with the client	<i>"How you were able to hear the patient talking and seeing them breathing" (P39)</i> <i>"Very detailed and good engagement with the client" (P11)</i>
		• Feedback on what went well and what can be improved	<i>"The feedback part allowing me to know what I did well and what I can improve on" (P27)</i>
		• Prompts to run tests	<i>"Prompts to run certain tests" (P40)</i>
		• Getting advice when confused	<i>"The ability to get advice if I was confused" (P27)</i>
		• Instructions to check with the patient	<i>"Gives enough instructions on how to check with patients" (P36)</i>
	Various skills available in VR simulation	• Patient assessment	<i>"The process of examination" (P43)</i> <i>"Patient assessment" (P25)</i> <i>"Respiratory and cardiac assessments" (P6)</i>
		• Treatment process	<i>"The treatment process" (P43)</i>
		• Accessible patient records	<i>"I loved how accessible patient's records were" (P29)</i>
		• Different options to support decision-making	<i>"I liked that it gave you lots of options with assessing the patient" (P20)</i> <i>"That we were given options that were in order so knowing what to do next was easy" (P5)</i> <i>"It presented you with options to choose from which helped you decide what to do" (P38)</i> <i>"Can experience different scenarios" (P20)</i>
		• Confusing at first	<i>"It was confusing at first" (P30)</i>
		• Takes a while to get used to VR	<i>"I enjoyed using the headset however it may take a while to get used to it" (P1)</i> <i>"On initial session I felt like I was trying so hard to get used to the VR that the systematic nursing assessment was poor but I think this would improve as I got used to the VR" (P40)</i> <i>"Took a bit of getting used to at the start" (P4)</i> <i>"I think it took me few min before getting the hang of it.... which I have expected" (P14)</i> <i>"It took a while to get used to the headset" (P19)</i>
Challenges to engaging with VR simulation	Getting used to navigating the VR environment		

	<ul style="list-style-type: none"> • Hard to understand at first 	<i>"At first it was hard to understand but when I found my way it was amazing" (P2)</i>
	<ul style="list-style-type: none"> • Not knowing where to find things at first 	<i>"At the start just not knowing where to find things but once I did it was ok" (P38)</i>
	<ul style="list-style-type: none"> • Figuring out how to properly use VR 	<i>"Figuring out how to use it" (P20)</i> <i>"That it was new to me, and I didn't fully know how to use it... I feel if I used it a few times I would get more used to it." (P21)</i> <i>"I wasn't sure how to use it properly but I'm sure this would improve with practice." (P3)</i>
	<ul style="list-style-type: none"> • Getting used to navigating the room 	<i>"The navigation" (P13)</i> <i>"It's a bit hard to navigate at first. In clinical scenario, we'd mostly have everything presented to us already so learning to navigate in VR is a bit difficult at first" (P15)</i> <i>"Navigating around the room" (P23)</i> <i>"Having to navigate around the room" (P29)</i> <i>"Trying to find certain things in the room" (P41)</i>
Technological issues	<ul style="list-style-type: none"> • Blurry screen/ graphics 	<i>"Picture was a bit blurry" (P37)</i> <i>"I could not read some of the results" (P24)</i> <i>"The blurring of the screen" (P7)</i> <i>"The thermometer was hard to read" (P35)</i> <i>"The graphics" (P36)</i>
	<ul style="list-style-type: none"> • Ill-fitting and uncomfortable headset 	<i>"Adjusting the headset" (P8)</i> <i>"Poor fit of headset and needing to still wear glasses so fit can feel a little awkward" (P18)</i> <i>"Uncomfortable" (P33)</i>
	<ul style="list-style-type: none"> • Difficult on the eyes 	<i>"It was a bit difficult on your eyes" (P6)</i> <i>"After a while your eye region becomes sweaty" (P16)</i>
	<ul style="list-style-type: none"> • Confusing controls 	<i>"Movement controls were confusing at times" (P39)</i>
	<ul style="list-style-type: none"> • Moving the head while seated 	<i>"Moving my head nearly 200 degrees... would be easier standing up" (P43)</i>
Not as interactive as real-life situations	<ul style="list-style-type: none"> • Not being able to react in real situations 	<i>"I would not recommend it for the DARE [simulation using a manikin] module as I feel the DARE module allows you to see how'd you react in real situations and VR would not provide that experience." (P21)</i>

Recommendations for integrating VR simulation into nursing and midwifery education		<ul style="list-style-type: none"> • Need to physically do the skills in real life 	<i>"When leaning, you need to physically do the skills and the VR simulation doesn't allow you to do actually do the skills"</i> (P2)
		<ul style="list-style-type: none"> • Some options are only available in real life 	<i>"There are some options I could not find that I would just ask for in real life"</i> (P13)
		<ul style="list-style-type: none"> • Not as interactive as the clinical setting/ classroom 	<i>"Wasn't as interactive as the live clinical setting, or the classroom"</i> (P17)
		Difficulties performing certain tasks	
	Using VR to practice and prepare for clinical placement	<ul style="list-style-type: none"> • Escalation of care 	<i>"Escalation of care"</i> (P26)
		<ul style="list-style-type: none"> • Giving medication 	<i>"Giving medication"</i> (P9)
		<ul style="list-style-type: none"> • Struggling to do things 	<i>"[I] did struggle to do things during the scenario"</i> (P38)
		<ul style="list-style-type: none"> • Being alone in the room 	<i>"Probably being the only one doing it in the room"</i> (P22)
		<ul style="list-style-type: none"> • VR as a tool to practice clinical skills 	<i>"I feel it would be a valuable learning tool which would allow to practice with a clinical setting"</i> (P1) <i>"To practice clinical scenarios and develop critical thinking skills"</i> (P3) <i>"As practise for clinical situations and experience in clinical thinking"</i> (P21) <i>"Good for practice"</i> (P7) <i>"For practicing for the skills modules"</i> (P35) <i>"It would be useful for clinical labs and assessments"</i> (P41) <i>"It would help to adjust to clinical settings and procedures"</i> (P37) <i>"Would be great in second and third year as a precursor to modules like DARE [simulation using a manikin]"</i> (P40) <i>"To show us how to do skills"</i> (P33)
		<ul style="list-style-type: none"> • Using VR to prepare for clinical placement 	<i>"I think it would be especially useful before going on placement for the first time to give us an idea of what to expect. As a first year, I had no idea what to expect so this would give first years a good idea."</i> (P2) <i>"Useful before going on clinical practice to teach students different observations taken"</i> (P6) <i>"It allows students to get a sense of what it's like out on clinical placement"</i> (P4) <i>"A little bit, before practice simulations"</i> (P30) <i>"I feel it will prepare nurses and midwives well for when they have to deal with real patients"</i> (P26)

Incorporating VR into teaching, learning, and assessment	• Using case studies	<i>"Use these case studies [VR simulation scenarios] and ask the patient questions to come up with a care plan and treatment" (P43)</i>
	• Using different scenarios	<i>"It can help bring different scenarios and one can see how they [students] will deal with it" (P16)</i> <i>"To experience different scenarios" (P20)</i>
	• Teaching about rare situations	<i>"A variety of rare situations could be taught about where we wouldn't maybe be able to experience them in real life settings as students" (P17)</i>
	• Incorporating VR into modules	<i>"It could be incorporated into a specific module" (P19)</i> <i>"Using it in clinical modules such as anatomy and physiology and pharmacology" (P27)</i> <i>"Brilliant to support the DARE program" (P40)</i>
	• Useful tool for exams	<i>"For exam purposes this would also be a useful tool" (P2)</i>
	• More beneficial than manikin	<i>"It's [being] able to visualise bruising that you would be unable to do on a manikin as well as you can communicate to the person unlike manikins" (P39)</i>
Making VR accessible	• Equipment available in designated room	<i>"All the equipment would be in the VR room" (P22)</i>
	• VR as optional	<i>"[VR] as an optional choice" (P18)</i>
	• Access at own time	<i>"I think it would be good to have access to this" (P12)</i> <i>"Along with simulations it would be great to have to practice in our own time like a designated area" (P23)</i> <i>"This would be a great tool to have in the classroom" (P6)</i>