

Evaluating Immersive Experiences

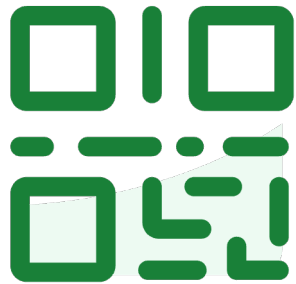
Notes for the SIT-DP module: **Developing Immersive Applications**

Created by: Chek Tien TAN



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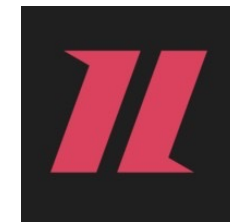
**Who has watched the pre-class
YouTube video? (there is no penalty for
saying no 😊)**

① Start presenting to display the poll results on this slide.

Who are we?

- Chek is a researcher in (Immersive) HCI
- Yet is the Head of Solutions Architect from Meta
- Sean is a Solutions Architect from Meta
- Mud runs a startup in blockchain games and AI, and experience in building XR games
- Jian Jie is a current Senior who has taken this module before.

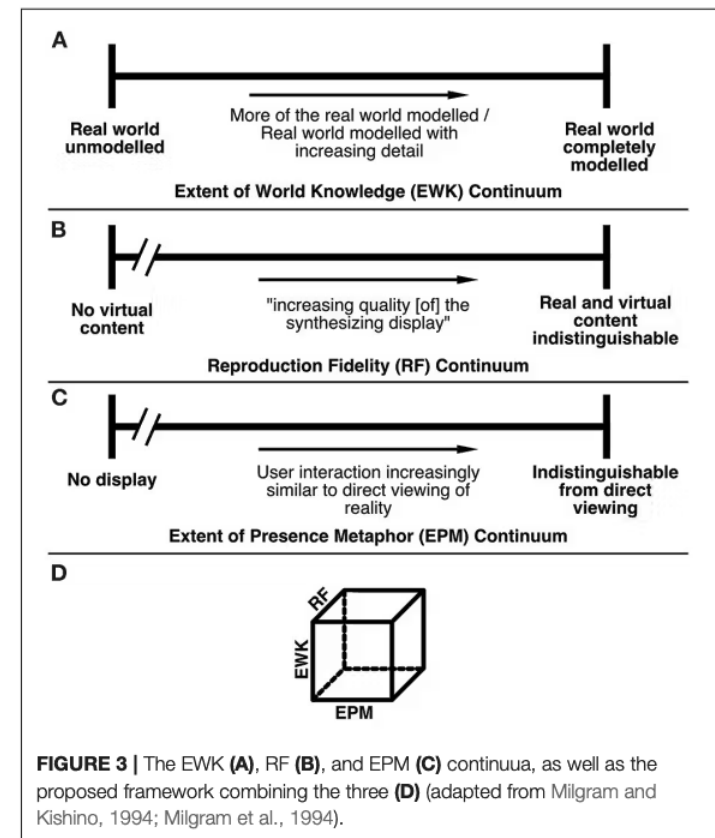
Centre for
IMMERSIFICATION



[recap] Dimensions of RV Continuum

- EWK is how much system understands the real world
- RF is how realistic the assets are
- EPM is how interaction affords realism

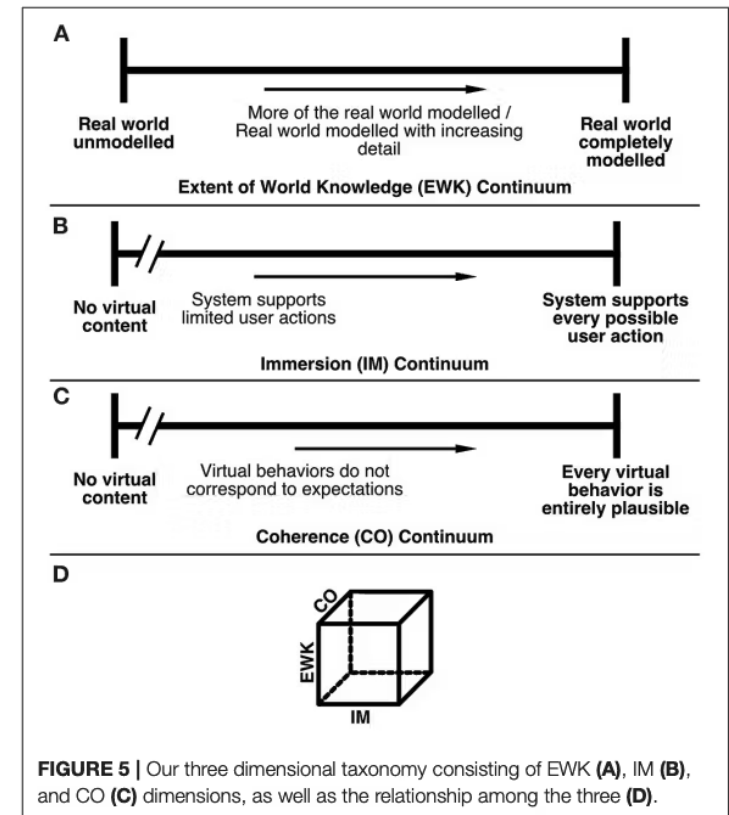
<https://doi.org/10.1117/12.197321>



[recap] Revisiting the RV Continuum

- combined the RF and EPM into IM (our THE article came before this 😅)
- added CO to represent the user
- note that this but one academic paper
- common perception of MR is different

<https://doi.org/10.3389/frvir.2021.647997>



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**Which of the following describes
immersion from a systems
perspective?**

① Start presenting to display the poll results on this slide.

Which of the following describes immersion from a systems perspective?

- ☒ Wide FOV ✓
 0%
- ☒ Higher spatial presence ✓
 0%
- ☒ Higher place illusion ✓
 0%
- ☐ 8K Resolution display
 0%
- ☐ Lower cybersickness
 0%
- ☒ 6-DOF inside-out tracking ✓
 0%

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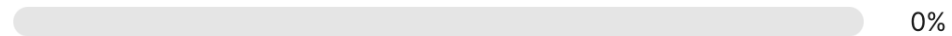


**Which of the following describes
immersion from an experiential
perspective?**

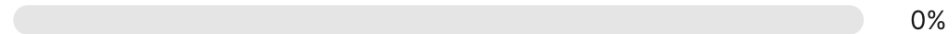
① Start presenting to display the poll results on this slide.

Which of the following describes immersion from an experiential perspective?

☒ Wide FOV



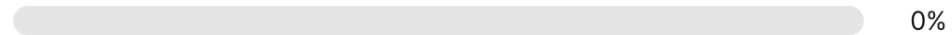
☒ Higher spatial presence



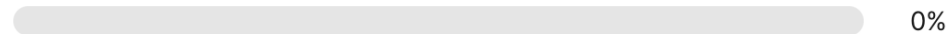
☒ Higher place illusion



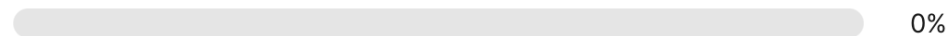
☒ 8K Resolution display



☒ Lower cybersickness



☒ 6-DOF inside-out tracking



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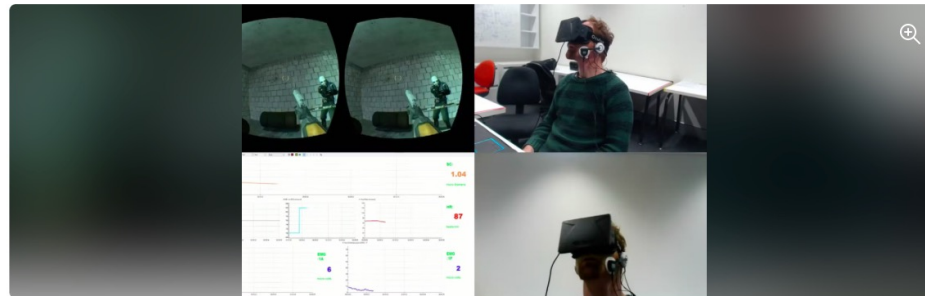
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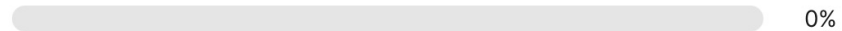
What experiential constructs were analysed in the user study in the paper on "Exploring Gameplay Experiences on the Oculus Rift"?

① Start presenting to display the poll results on this slide.

What experiential constructs were analysed in the user study in the paper on "Exploring Gameplay Experiences on the Oculus Rift"?

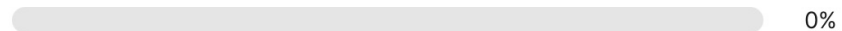


☒ Flow



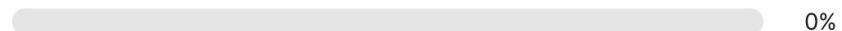
0%

☒ Presence



0%

☒ Place illusion



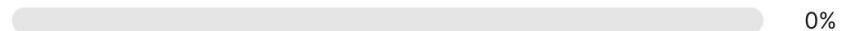
0%

☒ Plausibility illusion



0%

☒ Cybersickness



0%

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What quantitative data was analysed in the user study in the paper on "Exploring Gameplay Experiences on the Oculus Rift"?

① Start presenting to display the poll results on this slide.

What quantitative data was analysed in the user study in the paper on "Exploring Gameplay Experiences on the Oculus Rift"?



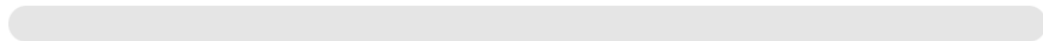
Flow



0%



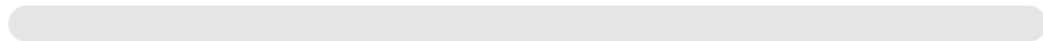
Presence



0%



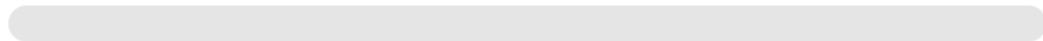
Cybersickness



0%



Physiological measures



0%



User behaviors



0%

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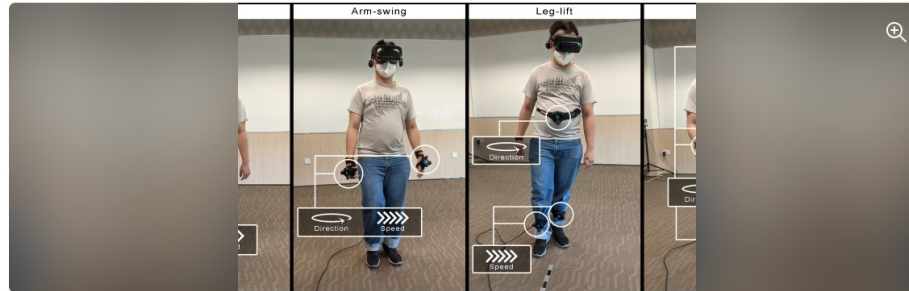
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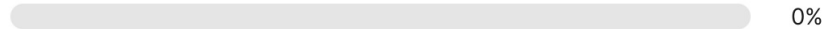
What quantitative data was analysed in the user study in the paper on "Understanding User Experiences Across VR Walking-in-place Locomotion Methods"?

① Start presenting to display the poll results on this slide.

What quantitative data was analysed in the user study in the paper on "Understanding User Experiences Across VR Walking-in-place Locomotion Methods"?



☒ Flow



☒ Presence



☒ Cybersickness



☒ Physiological measures



☒ User behaviors



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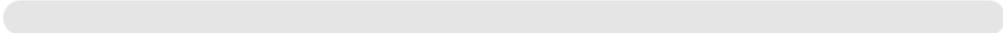
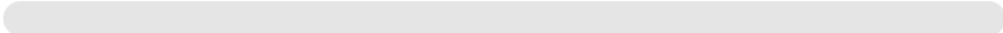

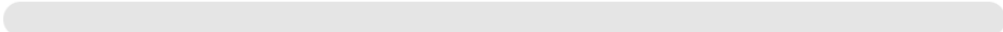
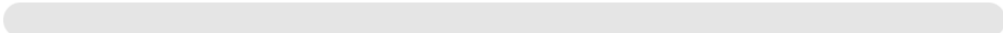
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What qualitative data was analysed in the user study in the paper on "Understanding User Experiences Across VR Walking-in-place Locomotion Methods"?

① Start presenting to display the poll results on this slide.

What qualitative data was analysed in the user study in the paper on "Understanding User Experiences Across VR Walking-in-place Locomotion Methods"?

- ☒ Flow
 0%
- ☒ Presence
 0%
- ☒ Cybersickness
 0%
- ☒ Physiological measures
 0%
- ☒ User behaviors
 0%

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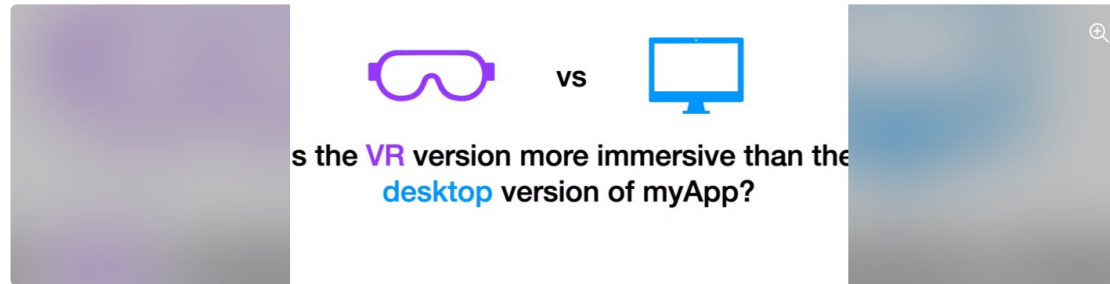
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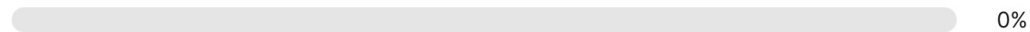
**What is/are the best type(s) of data to answer this
research question?**

① Start presenting to display the poll results on this slide.

What is/are the best type(s) of data to answer this research question?



☒ Observations



☒ Think-aloud during the experience



☒ Validated Questionnaires



☒ Post-experience interviews



☒ Physiological sensing



☒ Telemetry



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**What are appropriate types of
data to answer this research
question?**

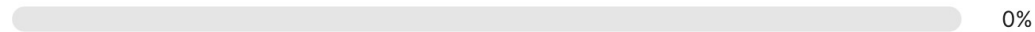
① Start presenting to display the poll results on this slide.

What are appropriate types of data to answer this research question?



How do user experiences differ between the VR class and the traditional class? What intervention afford during the class?

☒ Observations



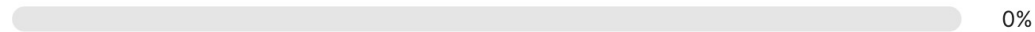
☒ Think-aloud during the experience



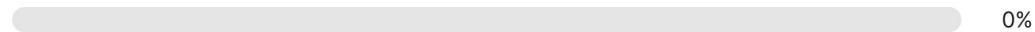
☒ Validated Questionnaires



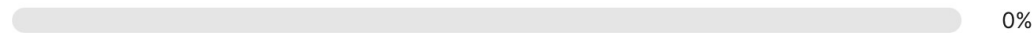
☒ Post-experience interviews



☒ Physiological sensing



☒ Telemetry



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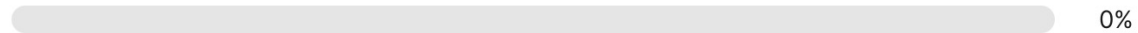
**Which of the following is NOT a
symptom of cybersickness?**

① Start presenting to display the poll results on this slide.

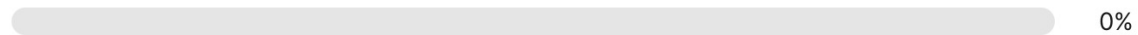
Which of the following is NOT a symptom of cybersickness?



☒ Blurred vision



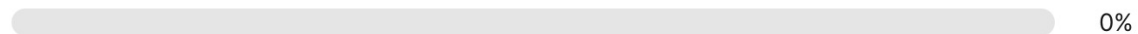
☒ Eyestrain



☒ Giddiness



☒ Loss of self-consciousness



☒ Vertigo



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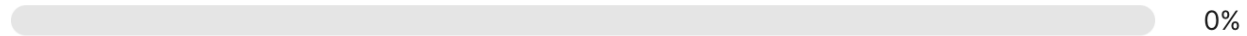


**"This one feels dizzier than the previous one. "
- What dimension of cybersickness is this?**

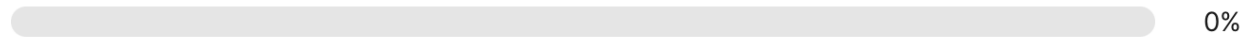
① Start presenting to display the poll results on this slide.

"This one feels dizzier than the previous one. " - What dimension of cybersickness is this?

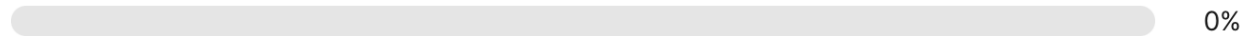
✓ Disorientation



✓ Nausea



✓ Oculomotor



✓ Involvement



✓ Realness



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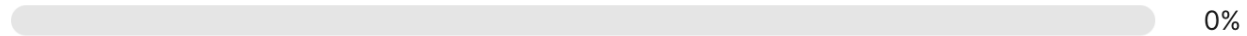


"I find it very straining on my eyes to look at stuff in the scene after a short while" - What dimension of cybersickness is this?

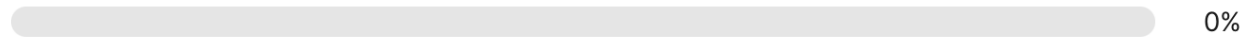
① Start presenting to display the poll results on this slide.

"I find it very straining on my eyes to look at stuff in the scene after a short while"
- What dimension of cybersickness is this?

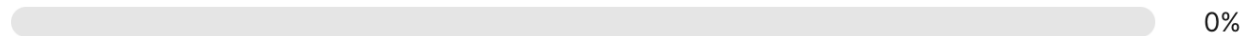
☒ Disorientation



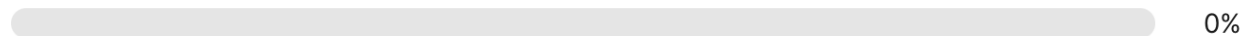
☒ Nausea



☒ Oculomotor



☒ Involvement



☒ Realness



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Which cybersickness questionnaire is best when I need to use the results to inform v2.0 development of my VR application?

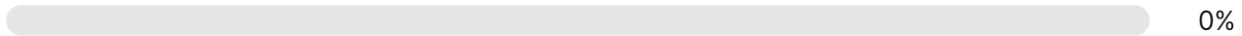
① Start presenting to display the poll results on this slide.

Which cybersickness questionnaire is best when I need to use the results to inform v2.0 development of my VR application?

✓ SSQ



✓ VRSQ/CSQ



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**Which cybersickness questionnaire should I use
when I need to compare my results with a pool of
prior research studies from others?**

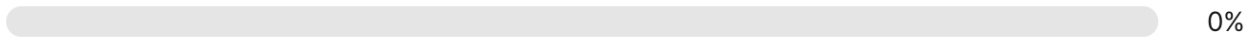
① Start presenting to display the poll results on this slide.

Which cybersickness questionnaire should I use when I need to compare my results with a pool of prior research studies from others?

☐ SSQ



☐ CSQ



☐ VRSQ



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**What is the type of experience
being described here?**

① Start presenting to display the poll results on this slide.

What is the type of experience being described here?

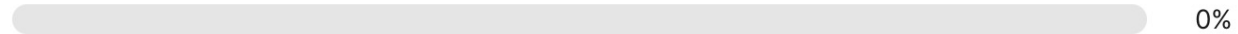
head knocked into the (real) wall as I tried
to catch the (virtual) ball coming towards me. I
was actually telling me how close I got
but I was totally unaware that she was t

☒ Presence



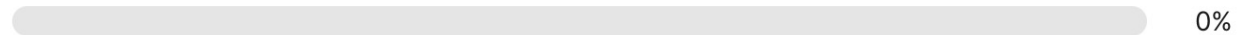
0%

☒ Flow



0%

☒ Cybersickness



0%

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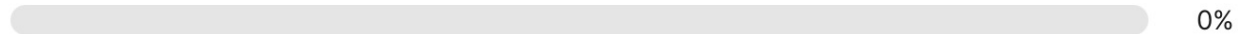
**What is the type of experience
being described here?**

① Start presenting to display the poll results on this slide.

What is the type of experience being described here?

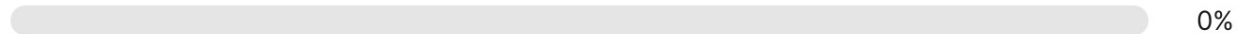
My friends were telling me how stupid I looked when I was playing the VR game. When I was in the game, I wasn't aware at all how I looked. I just wanted to conquer the challenges in the

☒ Presence



0%

☒ Flow



0%

☒ Cybersickness



0%

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**What is the main affordance on a
haptic glove for an experienced
VR user?**

① Start presenting to display the poll results on this slide.

What is the main affordance on a haptic glove for an experienced VR user?



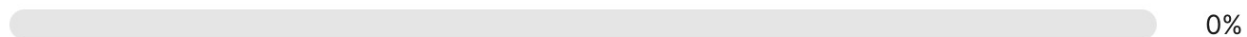
✓ Reach out to touch things in the virtual environment



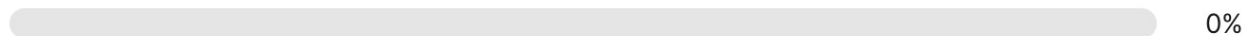
⊙ Pick up the VR controller to interact with the virtual environment



⊙ Wave hand in the air



⊙ Hug another character in the virtual environment



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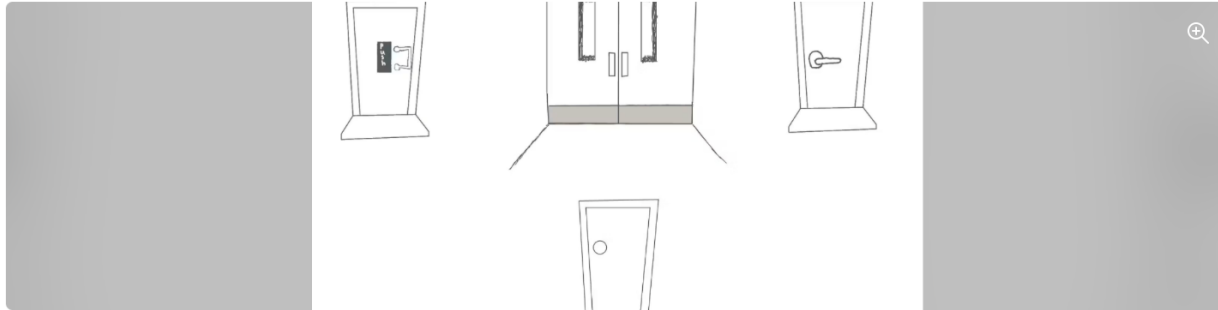
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**Which design provides the right
affordance for a door that is meant to
be pushed?**

① Start presenting to display the poll results on this slide.

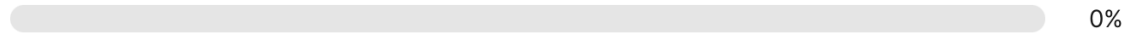
Which design provides the right affordance for a door that is meant to be pushed?



☒ Door with a large handle



☒ Door with a small handle



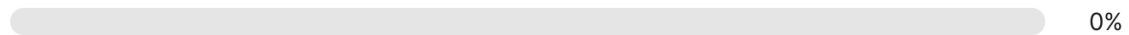
☒ Door with no handle and a flat metal plate



☒ Door with a twist knob



☒ Door with a large sign that says "PUSH"



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**Name one application that do you feel
provided you with the best experience,
and why?**

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Audience Q&A

① Start presenting to display the audience questions on this slide.