

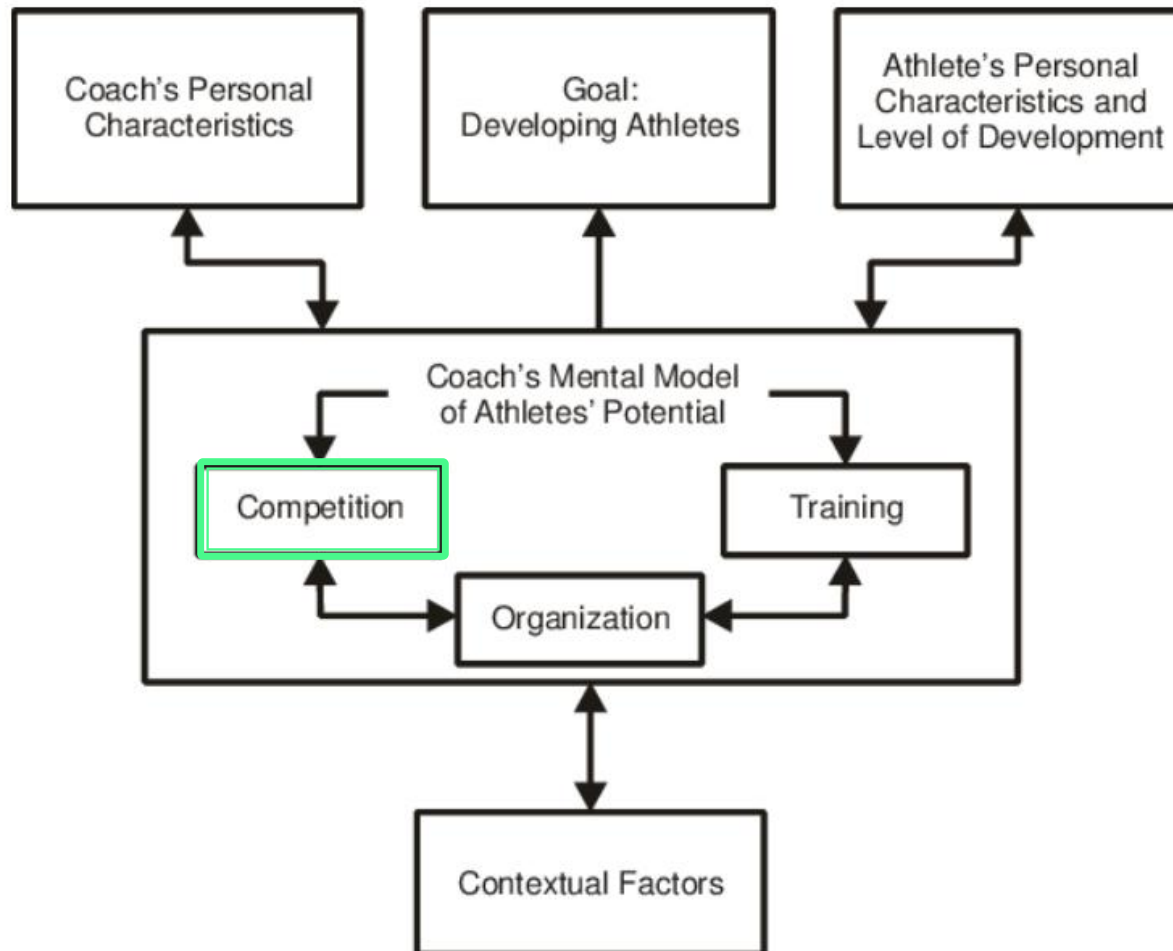
Testing of a 3D video environment for volleyball coaches

Origins of the study

- ▶ Coaching is an important part of the sport performance improvement last decades (Meletakos & Bayios, 2010 ; Wallace & Norton, 2014)



Origins of the study



Coaching model (Côté et al, 1995)

Origins of the study

- ▶ Study of coaches during competitions
 - Apparent behaviour (feedbacks, gestures ...)
 - Decision making process
 - Stimulated recall (Clark & Peterson, 1986 ; Gilbert & Trudel, 1994)
 - Explicitation interviews (Vermeersch, 1994)

What about the study of decision making process during the game ?



Origins of the study

Naturalism
= Study of the subject
In his natural environment



Rationalism
= Study of the subject in
a controlled environment

Origins of the study

Necessity to get an environment close to reality to analyse the selection of the information in the natural context

→ Virtual reality & 360° environment



Origins of the study

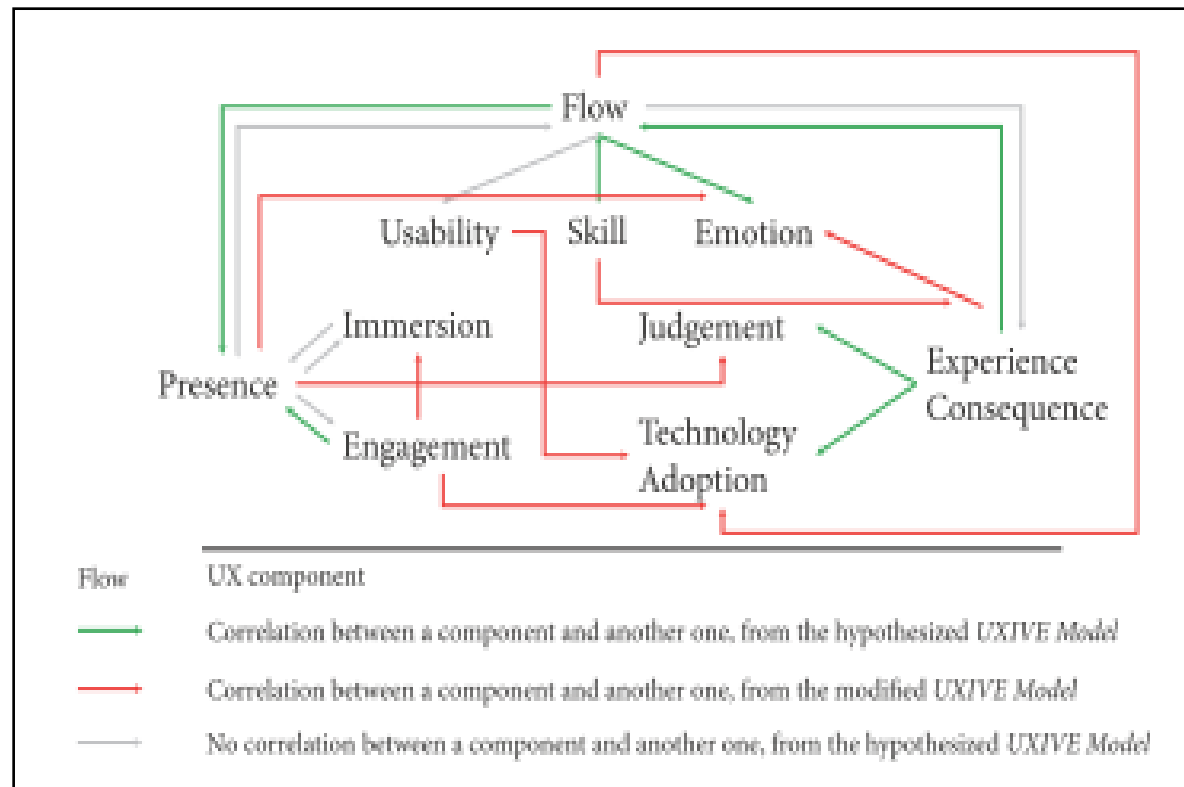
Previous examples in the literature ???

- 1) Football goal keeper (Stinson & Browman, 2014)
- 2) Handball goal keeper (Vignais et al., 2015)

And what about previous examples
in coaching ???

Origins of the study

User experience in immersive virtual environment model (Tcha-Tokey et al., 2018)



Goal

Implementation and analyse of a device allowing the study of volleyball coaches during a championship game

Methods

Step 1

- 1) Recording 2 volleyball simulation games (girls and boys) with a 360° camera
- 2) Data processing to divide games into 3 sequences of about 15 minutes

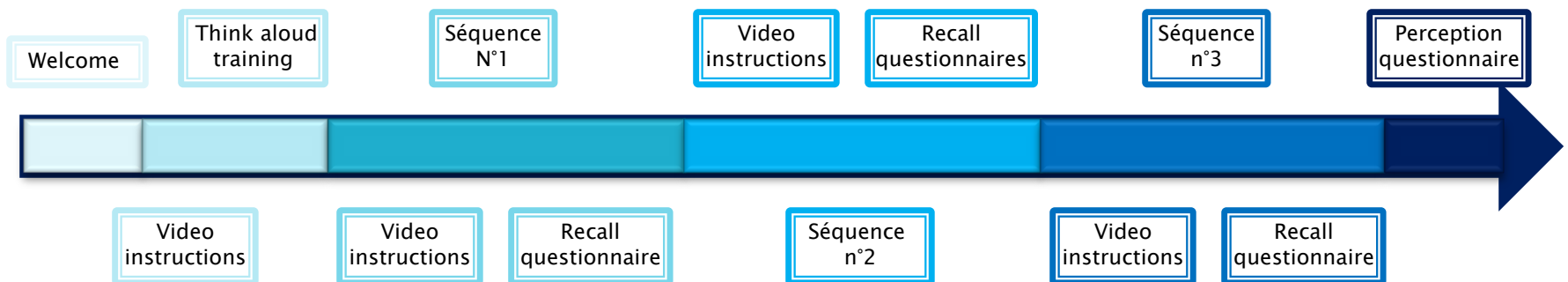


360°environment # VR environment

Methods

Step 2

- ▶ Sample : 17 volleyball coaches
- ▶ Tools : VR device (occulus rift), think aloud protocol, recall questionnaires, perception questionnaire



Methods

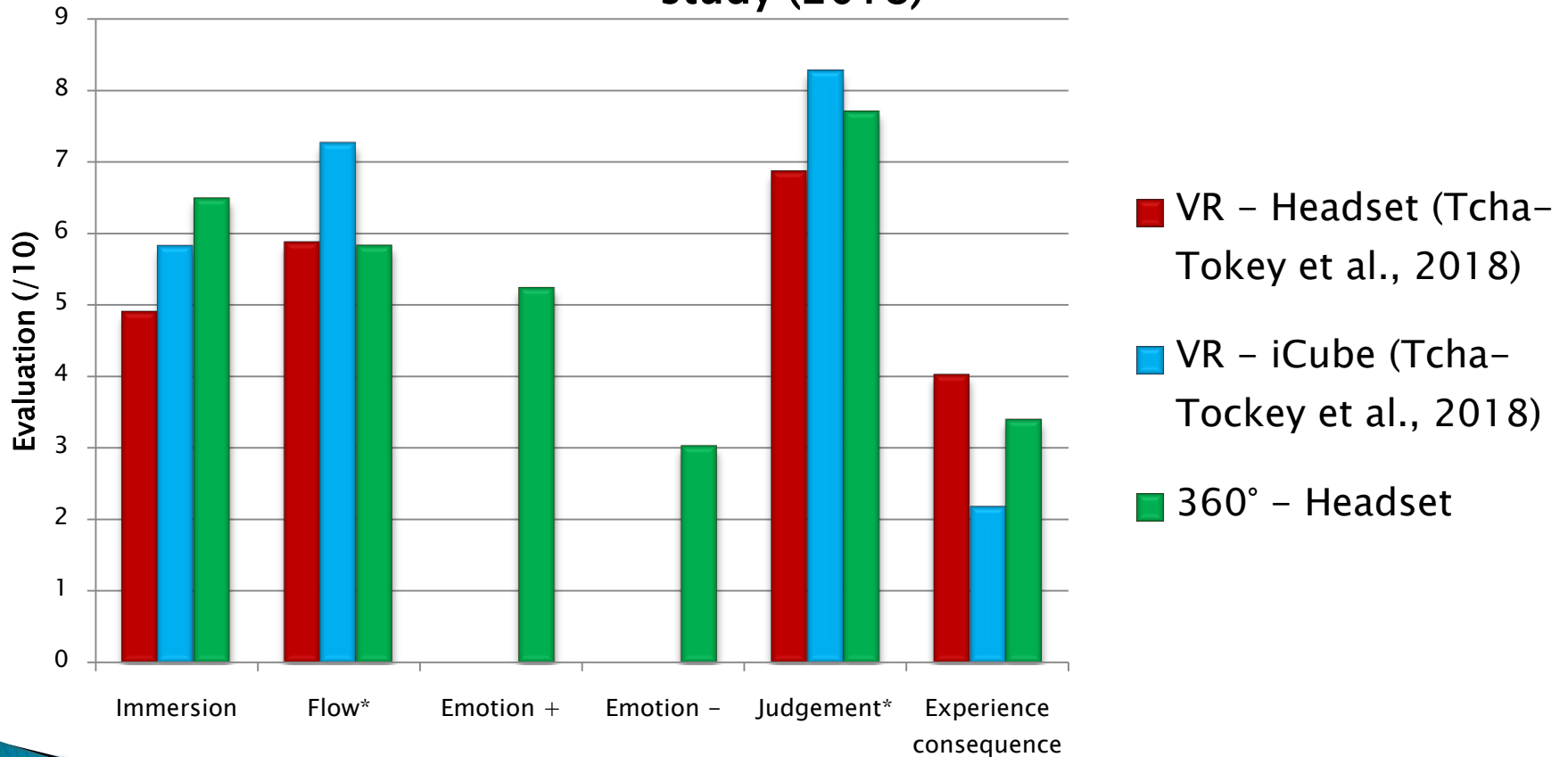
Step 2 – Focus on perception questionnaire

- 1) Starting point = validated questionnaire about perceptions of virtual environment users (Tcha-Tokey et al., 2018)
- 2) Modification = Removal of non-sense items

Ex : « I felt positive emotion when my actions were working »

Results

Comparison between our results and Tcha-Tockey et al. study (2018)



Results

Open questions

Main positives points of the experience

- 1) Enjoyment and pleasure from 3D environment : **9/17**
- 2) Quality of the environment : **7/17**
- 3) Utility of the device for the coaching : **5/17**

Results

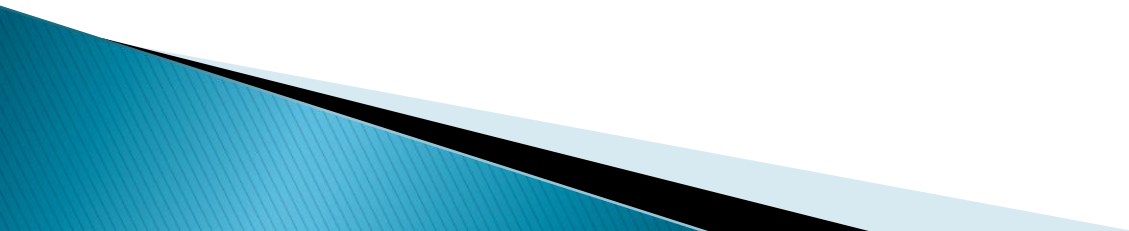
Open questions

Main negatives points of the experience

- 1) Lack of interaction : **7/17**
- 2) Quality of the environment : **3/17**
- 3) Negatives consequences : **3/17**

Results

Informal observations



Conclusion

- 1) Encouraging values of : immersion, flow, emotions, judgement and experience consequence
 - 2) Open questions : Great level of immersion, quality of the environment and utility for coaching practice BUT lack of interactivity
 - 3) Informal observations : Level of immersion seems really great for some coaches
- ➔ The device seems to reproduce an environment close to the reality despite the lack of interaction

**Thank you for your
attention !**

