Testing of a 3D video environment for volleyball coaches
Coaching is an important part of the sport performance improvement last decades (Meletakos & Bayios, 2010; Wallace & Norton, 2014)
Origins of the study

Coach’s Personal Characteristics

Goal: Developing Athletes

Athlete’s Personal Characteristics and Level of Development

Coach’s Mental Model of Athletes’ Potential

Competition

Training

Organization

Contextual Factors

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
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
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
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)

Evaluation (1/10)

- Immersion
- Flow*
- Emotion +
- Emotion -
- Judgement*
- Experience consequence

VR – Headset (Tcha–Tokey et al., 2018)
VR – iCube (Tcha–Tockey et al., 2018)
360° – Headset
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!