

Tablet Fish Tank Virtual Reality: a Usability Study

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Tablet FTVR

- What is Fish Tank VR?
- How effective is tablet FTVR?
- If it is useful, should we develop a new system or enhance existing devices?

Experiment

- We recruited 40 participants (30 male and 10 female, age ranging from 17 to 31 years old).
- We used a 2 × 2 experimental design in which each participant was assigned to the Normal 2D group, the Head-coupled group, the Anaglyph 3D group, or the Combined group.
- We used simulation sickness questionnaire (SSQ), presence questionnaire (PQ) and comparison questionnaire.

Results and Discussion

Table 1: Results summary. Mean and standard deviation of task performance time, error rates, SSQ scores, and PQ scores.

	Average task performance time (second)	Average number of error	SSQ score	PQ score
2D	11.57 * (9.09)	0.14* (0.46)	29.50* (37.75)	76.11 (16.34)
HCD	16.43 * (15.84)	0.66**◇ (1.79)	31.42* (42.90)	70.25 (15.34)
Anaglyph	13.70 (30.85)	0.16* (0.66)	48.62 (28.21)	83.70 (16.26)
Combined	12.64 (8.64)	0.16◇ (0.62)	74.43** (40.83)	74.80 (11.67)

*, * and ◇ indicate statistically significant differences between two means in the same table column.

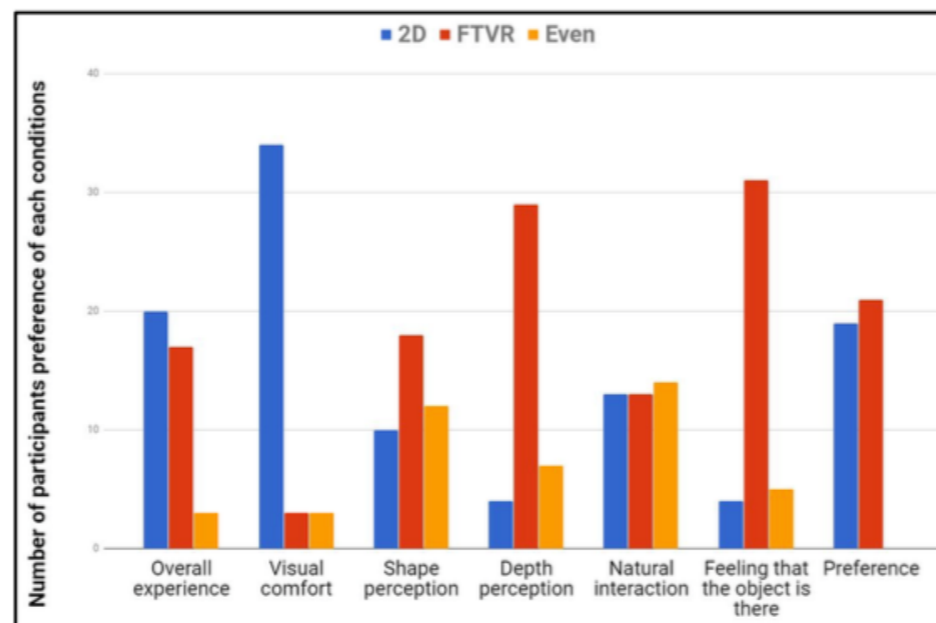


Figure 2: Users' preference between the Normal 2D and the Combined view modes along the seven dimensions.

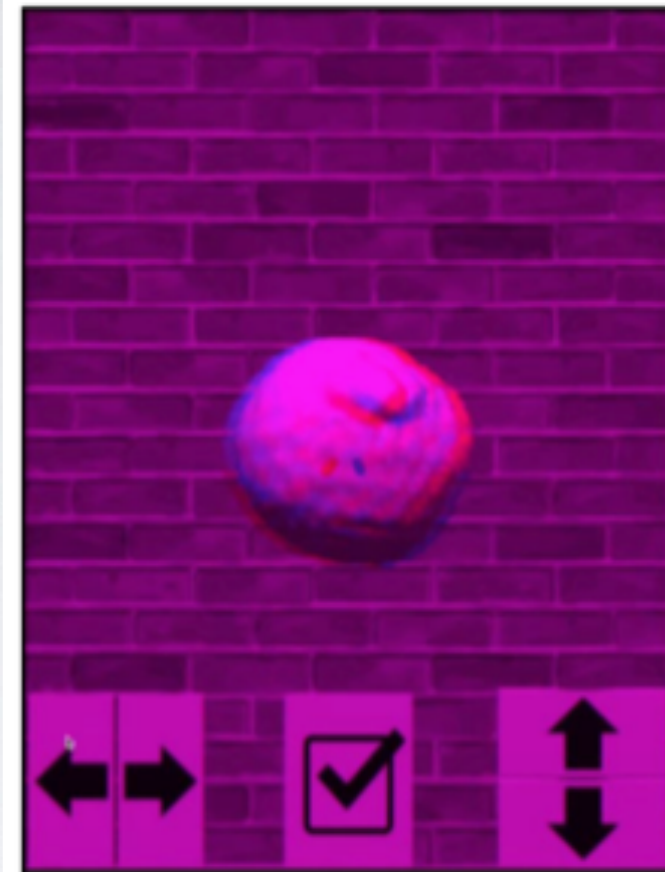


Figure 1: Test application and the four levels of noise.

For full details of this research, please refer to <https://goo.gl/pgsXSn>

