



# Interpreting in Virtual Reality



Lifelong  
Learning  
Programme

## The User Experience Systems for interpreter training

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PRIFYSGOL  
**BANGOR**  
UNIVERSITY



# What are the objectives?

**To discover persons' behaviors, attitudes and emotions about the interpreter tools.**

Perceptions of system aspects such as utility, ease of use and efficiency

The international standard on ergonomics of human system interaction, ISO 9241-210

Three factors

1. The system,
2. The user and
3. The context of use.



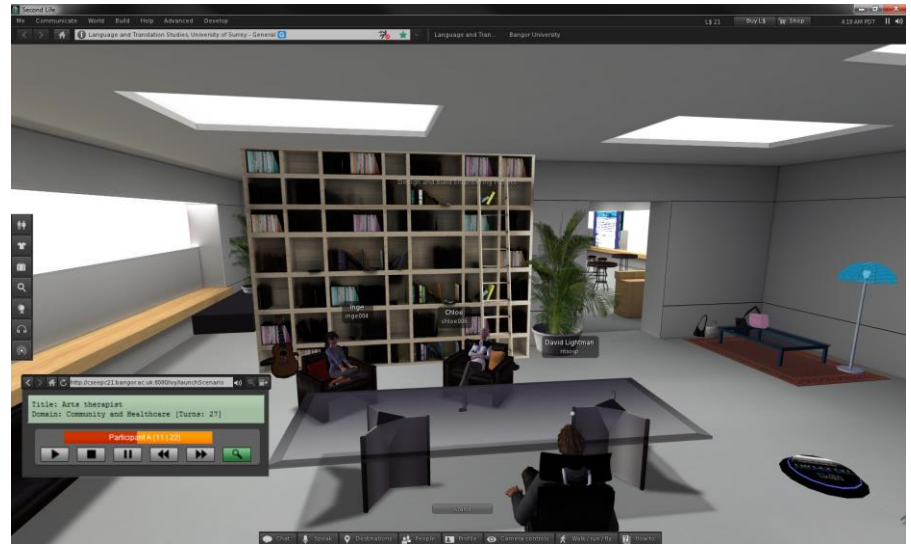
# What systems?

## Prepared content

- Backbone (video corpus)
- IVY practice mode (audio + 3d avatars)

## Role Play

- IVY live mode (3d avatars)
- Google Hangout (video conferencing)



<http://ueq-online.org/>

Users express feelings, impressions, and attitudes that arise when they use a product.

## Likert scale (1..7) over 6 dimensions



## Appearance



### Attractiveness

Overall impression of the product.  
Do users like or dislike is?

## Design quality



### Stimulation

Is it exciting and motivating to use  
the product?



### Novelty

Is the product innovative and  
creative?

## Use quality



### Perspicuity

Is it easy to get familiar with the  
product?



### Efficiency

Can users solve their tasks with the  
product without unnecessary effort?



### Dependability

Does the user feel in control of the  
interaction?

## Appearance



### Attractiveness

annoying / enjoyable  
good / bad  
unlikable / pleasing  
unpleasant / pleasant  
attractive / unattractive  
friendly / unfriendly

## Design quality



### Stimulation

valuable / inferior  
boring / exiting  
not interesting /  
interesting  
motivating / demotivating



### Novelty

creative / dull  
inventive / conventional  
usual / leading edge  
conservative / innovative

## Use quality



### Perspicuity

not understandable /  
understandable  
easy to learn / difficult to learn  
complicated / easy  
clear / confusing



### Efficiency

fast / slow  
inefficient / efficient  
impractical / practical  
organized / cluttered



### Dependability

unpredictable / predictable  
obstructive / supportive  
secure / not secure  
meets expectations / does not



# Instructions – Rate the environment ‘quickly’

“Please decide **spontaneously**. Don’t think too long about your decision to make sure you convey your original impression.”

“Sometimes you may be unsure... but please tick a box in every line”

“It is your personal **opinion** that counts. Please remember there is no wrong or right answer!”

	1	2	3	4	5	6	7	
annoying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	enjoyable
not understandable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	understandable
creative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	dull
easy to learn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	difficult to learn
valuable	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	inferior
boring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	exciting
not interesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	interesting
unpredictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	predictable
fast	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	slow
inventive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	conventional
obstructive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	supportive
good	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	bad
complicated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	easy
unlikable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	pleasing
usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	leading edge
unpleasant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	pleasant
secure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	not secure
motivating	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	demotivating
meets expectations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	does not meet expectations
inefficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	efficient
clear	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	confusing
impractical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	practical
organized	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	cluttered
attractive	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unattractive
friendly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unfriendly
conservative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	innovative

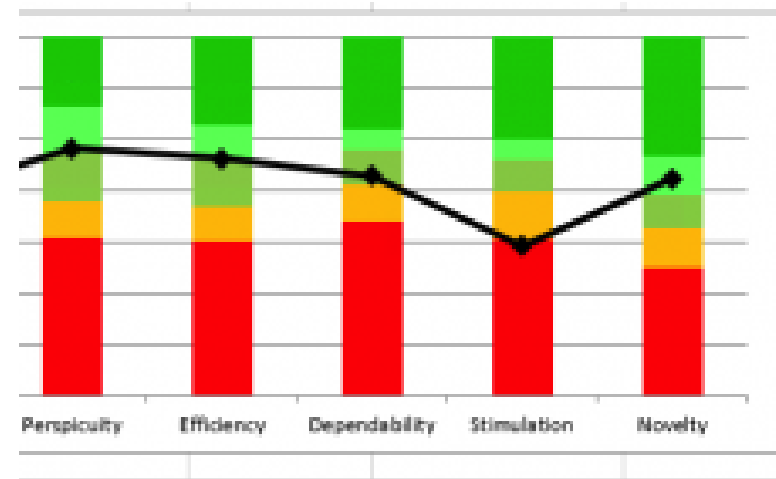
Example from a student on Backbone

# Understanding the results

- Excellent to Bad scales
- Users make different judgments for different categories.
- So, results are scaled from a benchmark.
  - Benchmark created by Lugwitz08, Hinderiks2010.
  - 4818 people, from 163 studies of different products
  - Business software, web pages, social networks etc.



Example result: shows average mean and Benchmark ranges



Laugwitz. (2008). Construction and evaluation of a user experience questionnaire. In: Holzinger, A. (Ed.): USAB, LNCS 5298, pp. 63-76.

Hinderks, et al (2012) "Konstruktion eines Fragebogens für jugendliche Personen zur Messung der User Experience". In: Usability Professionals 2012 pp. 78 – 83,



# Our process, then results

1. Instructions given
2. Task undertaken  
(students observed and videoed)
3. Participants complete demographic questions
4. Participants complete UEQ
5. Participants reflected on their work.



	Prepared Content		Role Play	
	Backbone	IVY Practice Mode	IVY live model	Google Hangout
Univ. Surrey, UK	✓	✓	✓	✓
AMU, Poznań	✓	✓	✓	✓
UCY, Cyprus	✓	✓	✓	✓

# Backbone

Backbone

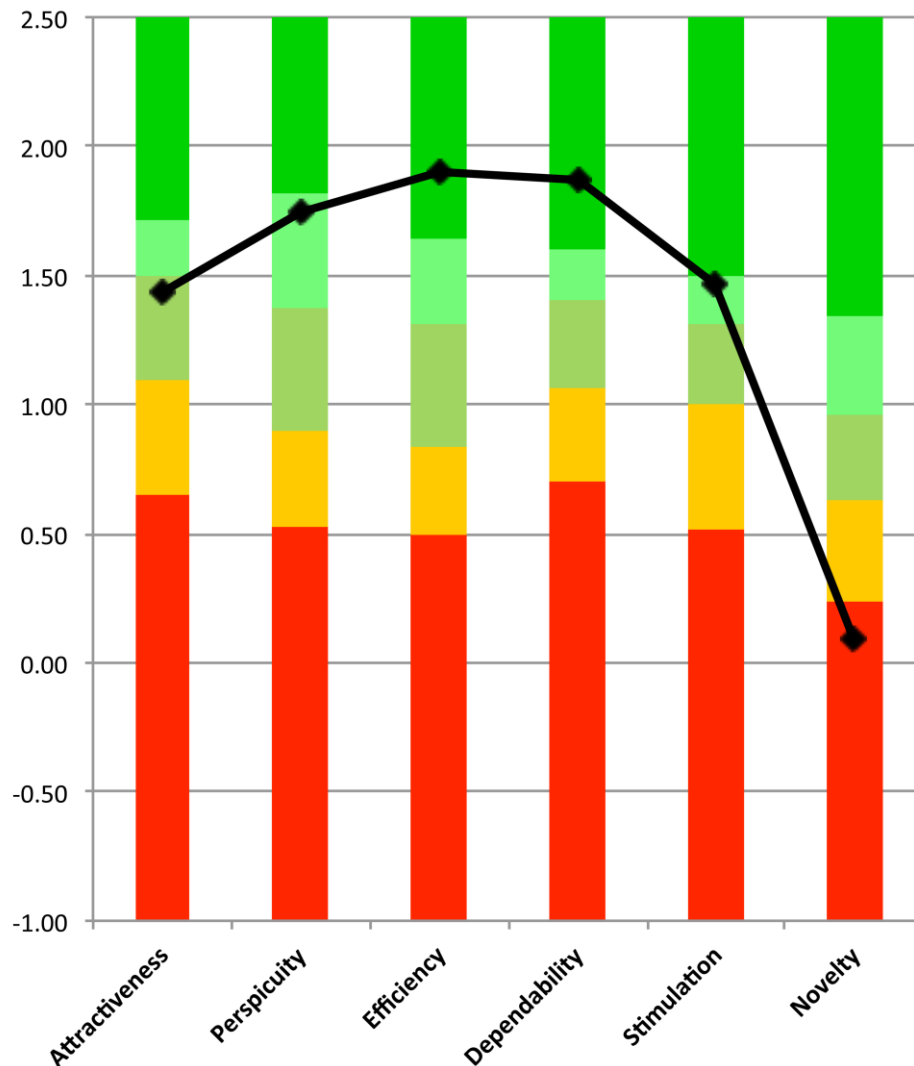
IVY Practice mode

IVY live mode

Google Hangout

## Highlights

- Easy to learn, Fast,
- Secure, Meets expectation
- Clear, friendly, efficient
- Video corpus is dependable.
- People know what to do.
- Not so leading-edge, **but**
  - dependable,
  - Efficient,
  - easy to learn,



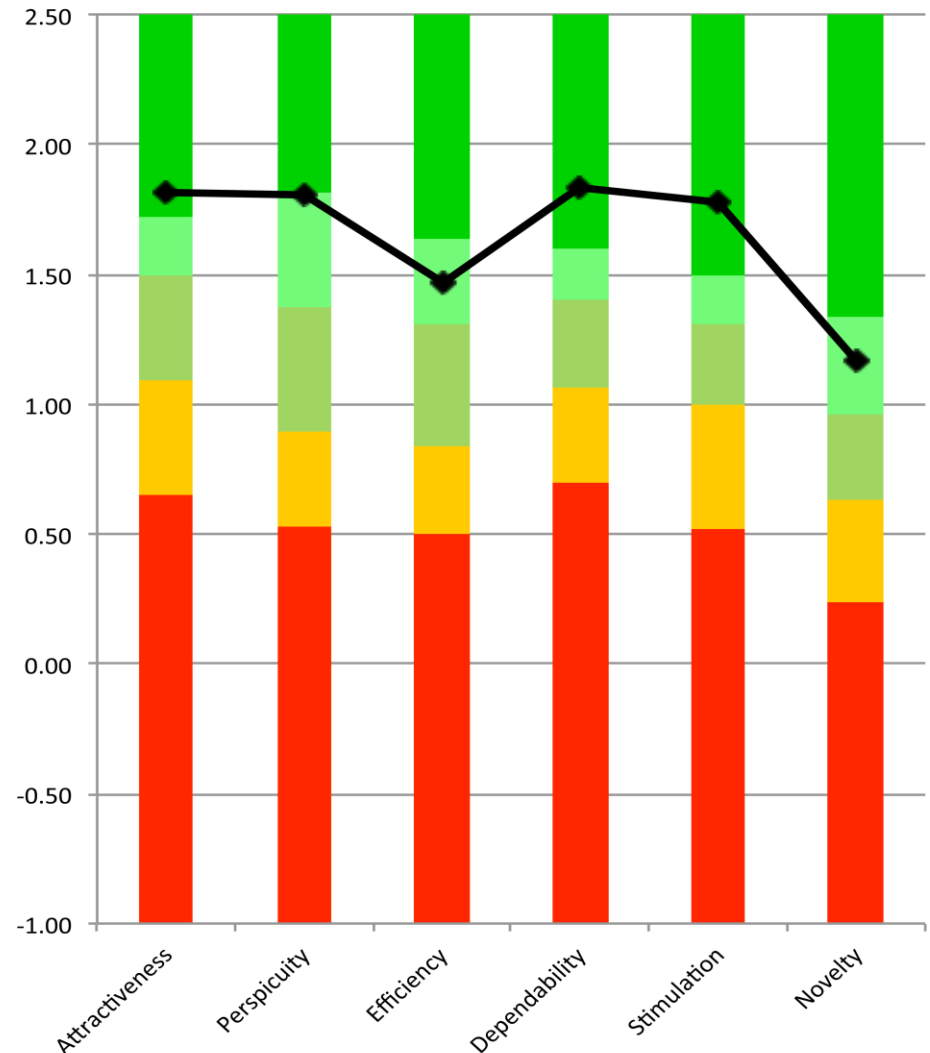
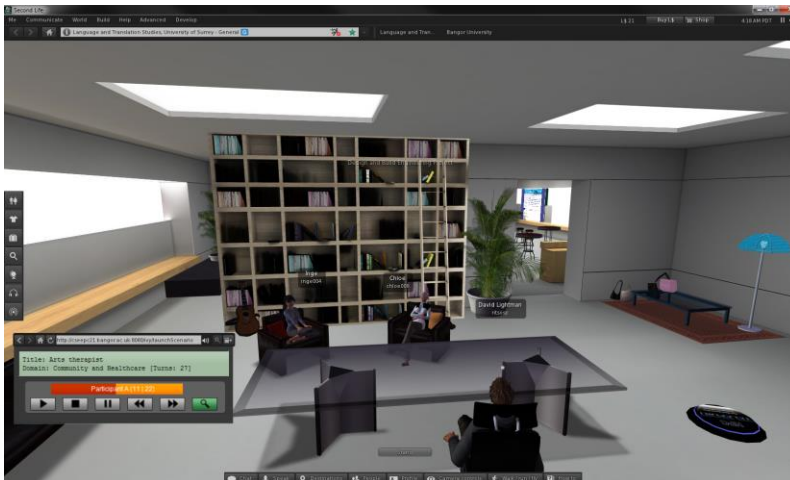
Info Corpus: IVY English Corpus Menu Language Help

Home Browse Section Search Co-Occurrence Concordances Lexical Lists Resources

Preview	Interview	Options
	<b>A Health Center - Healthcare accessible for everyone</b> Julie Squires has been working at a health center for over 20 years. She talks about how the health center operates, what services it offers, how it has improved over the years and about the general concept of health centers in the United States. She also talks about the downsides of the healthcare system such as people without health insurance, elderly people and the amount of paperwork. Accent or variety: American English	<a href="#">Play video</a> <a href="#">Play audio</a> <a href="#">Download audio file</a> <a href="#">Show transcript</a> <a href="#">Show section overview</a>
	<b>A Shop for Ranch Supplies</b> Frannie Sing is the owner of a little shop for ranch supplies in Santa Fe, New Mexico. The designs of her clothes (hats, boots, shirts, etc.) are exceptional in that they mirror the mutual influences of different cultures in the Southwest. These include Spanish, Moorish, and Indian culture. Accent or variety: American English	<a href="#">Play video</a> <a href="#">Play audio</a> <a href="#">Download audio file</a> <a href="#">Show transcript</a> <a href="#">Show section overview</a>
	<b>A local politician from Santa Fe</b> David Pfeffer is one of the eight city councilors of the community of Santa Fe in New Mexico (US). He starts off by explaining how the city council works and then gives some examples of the public and economic issues he deals with. Accent or variety: American English	<a href="#">Play video</a> <a href="#">Play audio</a> <a href="#">Download audio file</a> <a href="#">Show transcript</a> <a href="#">Show section overview</a>

## Highlights

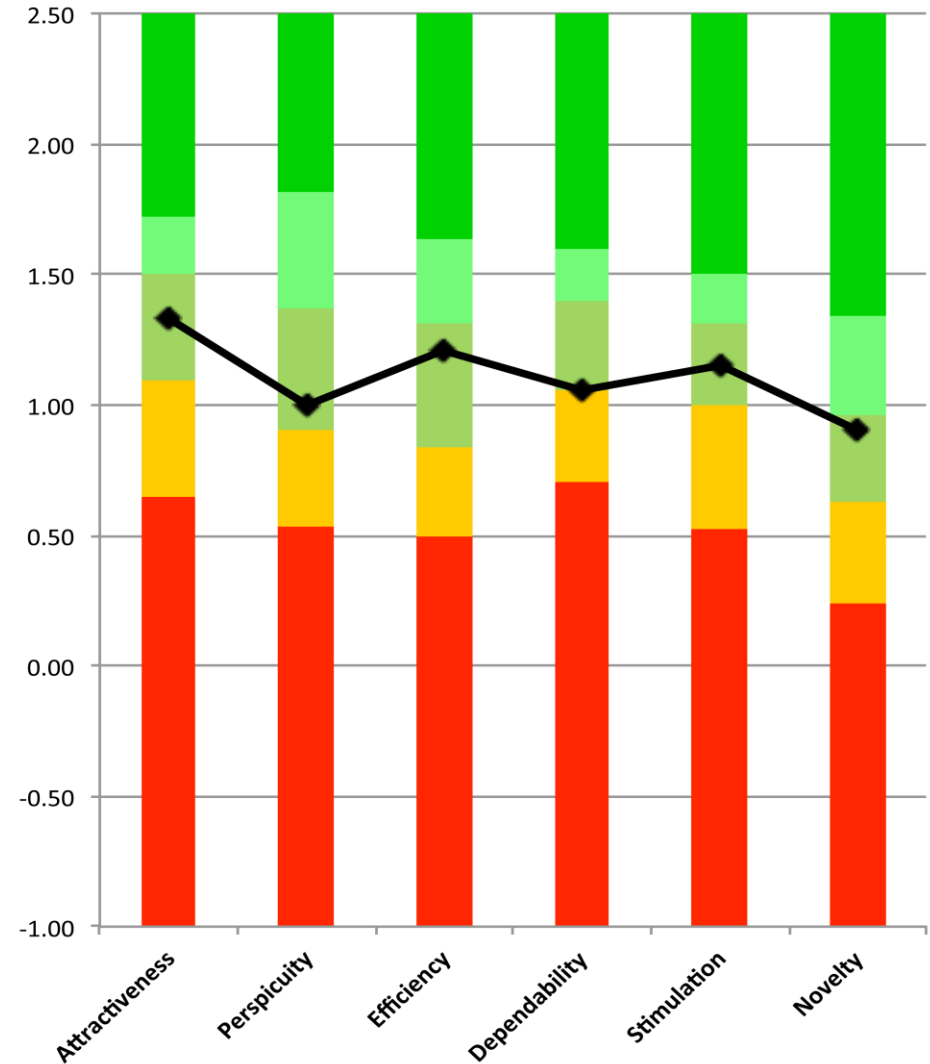
- Every dimension excellent or good
  - Enjoyable, understandable
  - Pleasing, easy to learn
  - Attractive
- Innovative, leading-edge, exciting



## live mode

### Highlights

- Pleasant, valuable, interesting
- “Above average” in all dimensions,
  - especially higher in attractiveness and novelty (e.g., creative, inventive).
- More negatives:
  - slower, unpredictable, valuable, confusing



# Video conferencing

Backbone

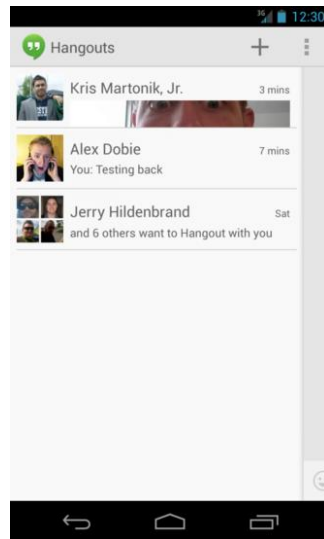
IVY Practice mode

IVY live mode

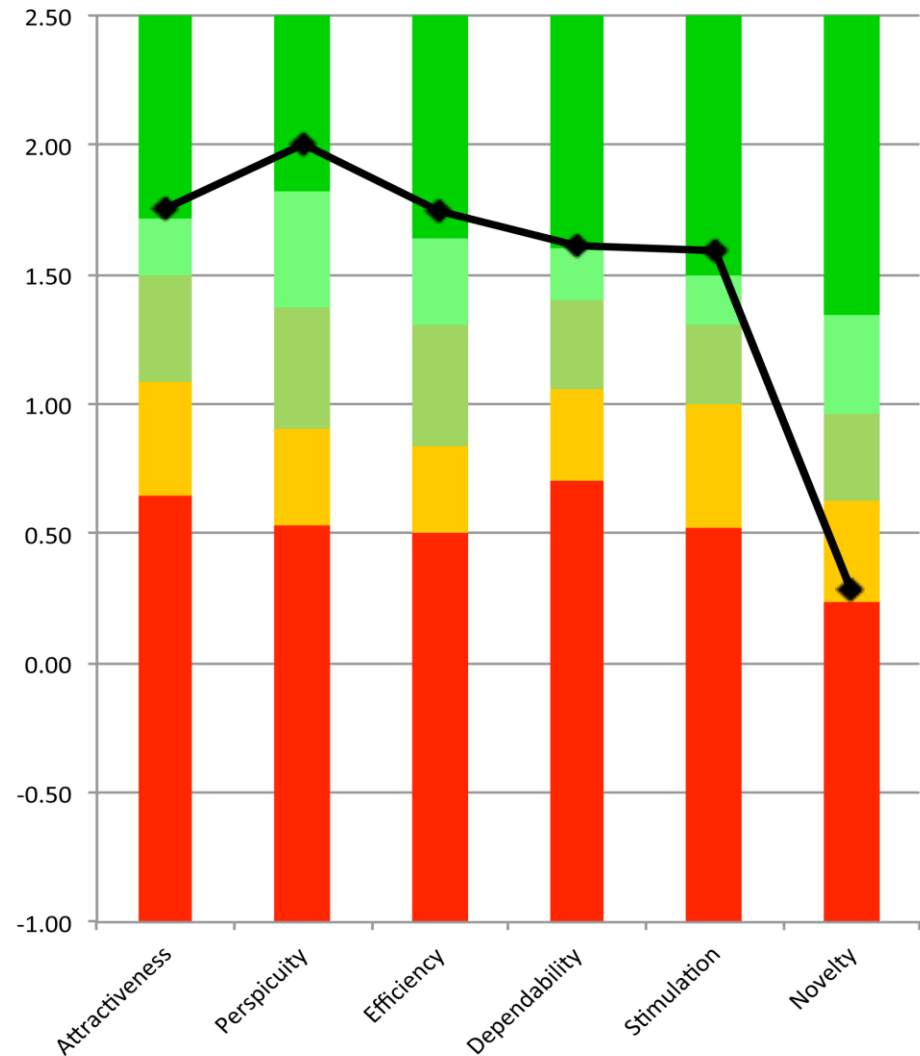
Google Hangout

## Highlights

- Easy to learn, valuable, fast, meets-expectations, friendly
- Familiar, conventional, practical, organized



[http://commons.wikimedia.org/wiki/File:Google\\_hangouts\\_on\\_android.png](http://commons.wikimedia.org/wiki/File:Google_hangouts_on_android.png)



# In summary

- Users found all tools usable
- Users have different experiences with different tools.
- All tools have results above “average”.
  - In comparison with benchmarks.
- Participants responses are positive and highlight the good craft of the different tools.
- The UEQ is only one part in the evaluation toolkit
- Still more work to be done – more evaluation to be achieved.

Each tool has been enjoyable to use, participants had good experiences.

**Backbone and Video Conferencing** tools are more familiar, so are more usable, convenient, quick to learn etc.

**IVY Live mode and IVY practice mode** are more exciting, novel, creative, motivating, interesting to use.





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