EVALUACIÓN Y USABILIDAD

6/13/22

Referencias:

- Research Methods in Human-Computer Interaction. Lazar, Feng and Hochheiser – capitulo 14
- The Joy of UX – David Platt. 2016.
- Measuring the User Experience. Collecting, analyzing and presenting usability metrics. Tullis and Albert, 2013.

IMPORTANTE:

(AVISO IMPORTANTE) Sobre fechas finales - corrección mensaje anterior

13 de jun en 14:41

Valeria Paz Herskovic Maida

Todas las secciones

Estimados/as,

Lamento la confusión, pero debido a que hay personas a las que les complica cambiar las fechas finales, volveremos a la planificación original del curso. Eso significa:

1.- La entrega final del informe de lecturas es el 29/06 a las 20:00hrs.

2.- El examen es el sábado 2 de julio a las 8:30am, de forma presencial, sin apuntes.

Por favor actualicen la información si es que la guardaron, para que no haya confusiones.

Nos vemos a las 15:30.

Saludos

Valeria

¿POR QUÉ A VECES EL SOFTWARE APESTA?

No fue testeado en las personas correctas

No fue testeado con las personas haciendo las tareas correctas

Testeado demasiado tarde

Nunca fue testeado!

¿POR QUÉ NO SE EVALÚA?

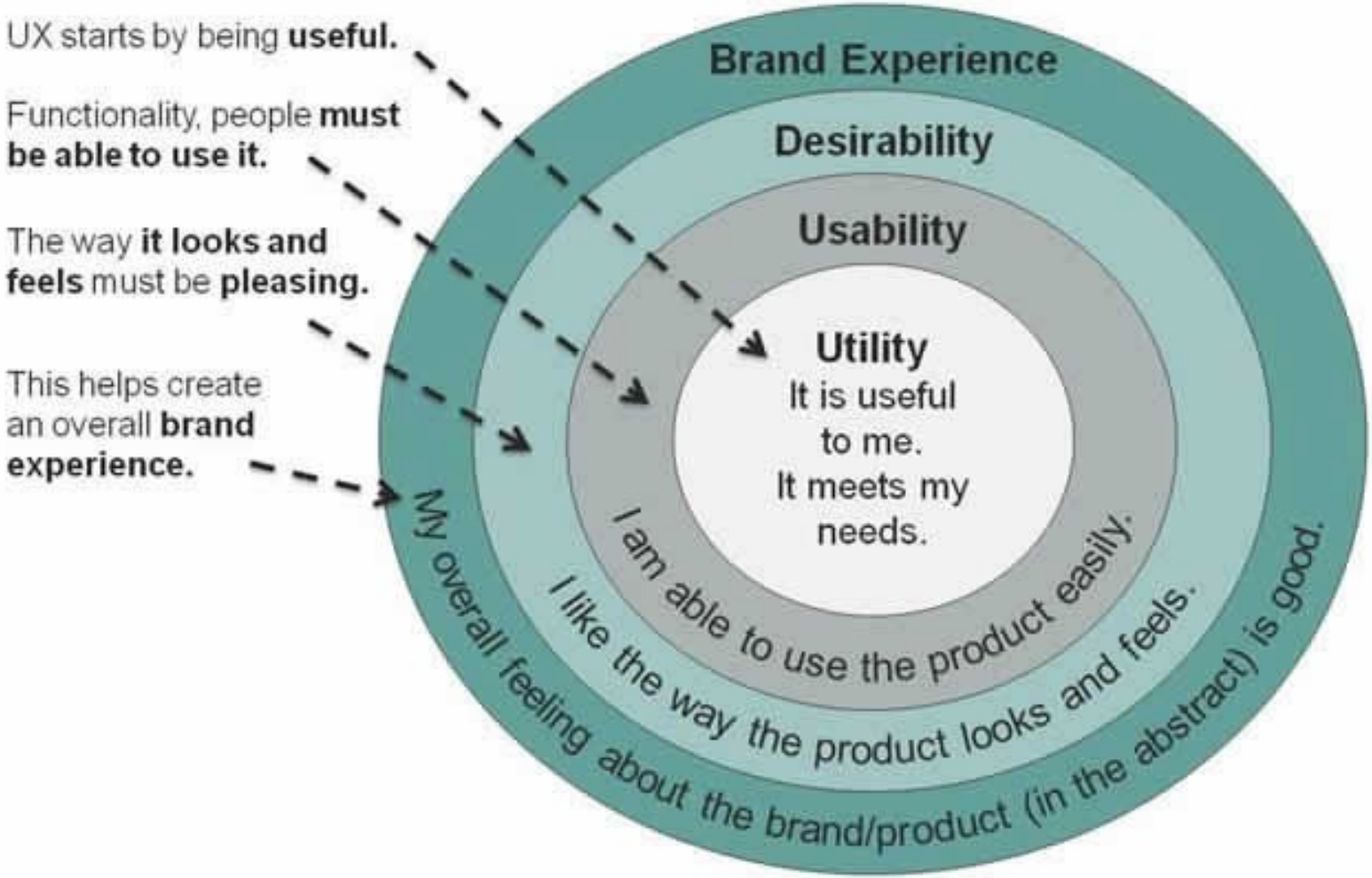
Los desarrolladores no reconocen sus propias falencias, y el usuario no eres tú.

- "I had a recent experience with a designer who was invited to observe users of a large commercial real estate site that she had designed. She declined, saying 'I have no need to know what people think of the design. I designed it with a specific purpose in mind, and I believe I achieved my goal. What could I learn?'"

Se piensa que es caro y difícil.

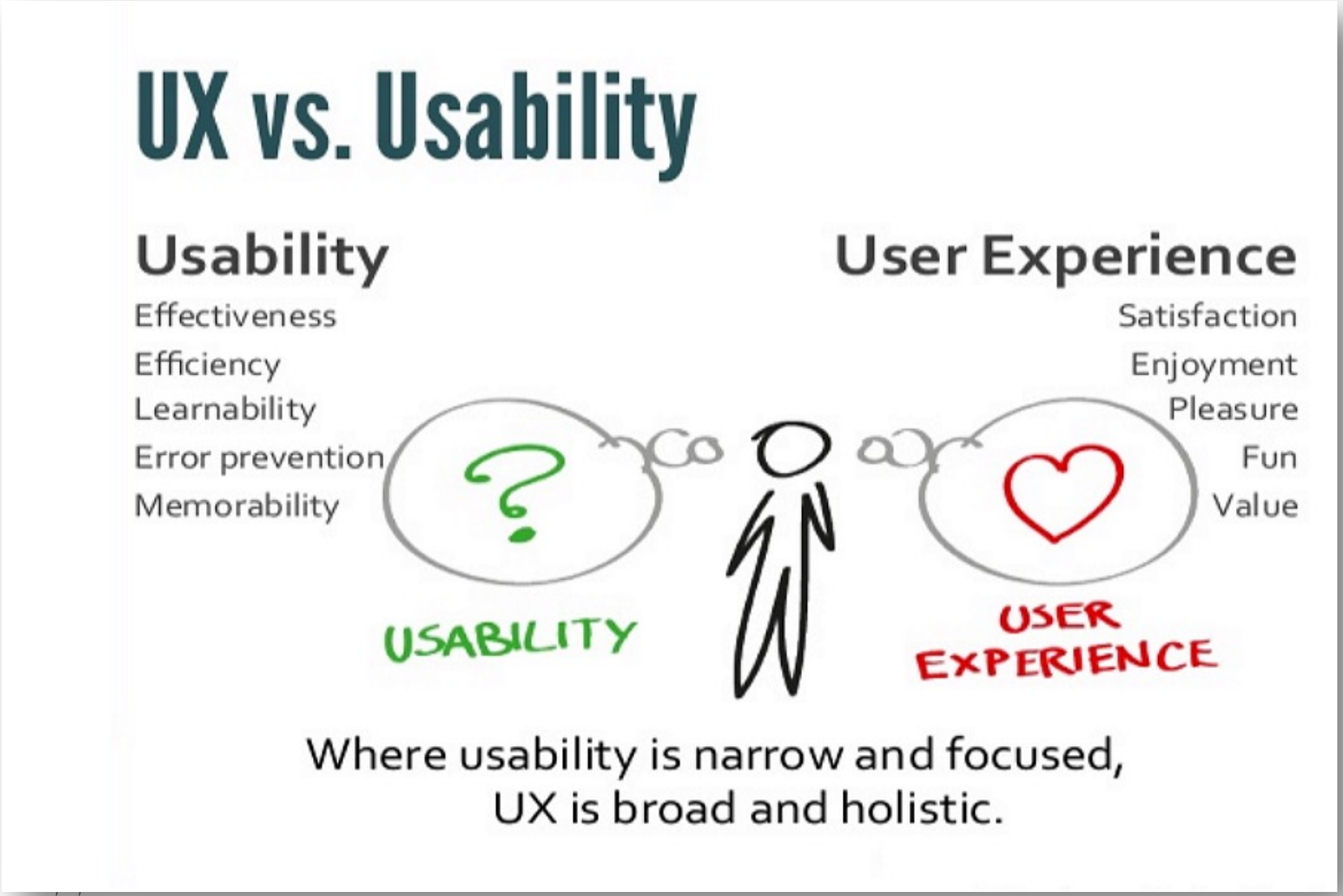
Se piensa que es un paso separado dentro del proceso UX, y que hay que hacerlo al final.

USER EXPERIENCE (UX)



Source: User Experience 2008, nnGroup Conference Amsterdam
Retrieved from: http://neospot.se/usability-vs-user-experience/

USER EXPERIENCE (UX)



MEDIDAS CLÁSICAS DE USABILIDAD

Effectiveness

Efficiency

Satisfaction

MEDIDAS (MÉTRICAS) DE USABILIDAD

Tiempo para aprender

Velocidad de performance

Tasa de errores de usuarios

Retención a través del tiempo

Satisfacción subjetiva

Hay tradeoffs

MÉTRICAS DE UX

Performance metrics (Task success, Time on task, Errors, Efficiency, Learnability)

Issue-Based metrics: Usability issues + Severity Ratings (Frequency of unique issues, frequency of issues per participant, frequency of participants, issues by category, issues by task)

Self-reported metrics (Ease of use, after-scenario questionnaire, SUS y otros cuestionarios)

Behavioral and Physiological Metrics (Eye tracking (dwell time, n° of fixations, fixation duration…), emotion (facial expressions, skin conductance…), stress (heart rate variance, …))

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1. Toma demasiado tiempo recolectar métricas

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7. No se aplican a productos nuevos
8. No existen para los temas particulares de algún desarrollo
9. No las entienden los managers
10. Es dificil tener buenos datos con pocos participantes

CATEGORÍAS DE EVALUACIÓN

Controlled settings directly involving users (Usability labs, research labs)

- Usability Testing
- Experiments

Captar problemas de usabilidad

Capturar contexto de uso

Natural settings involving users (online communities, products used in public pl

- Field studies

Ver cómo se usa tecnología en setting real

Difícil de realizar, largos

Any settings not directly involving users

- Inspections
- Heuristics
- Walk-throughs
- Models
- Analytics

No detecta problemas difíciles de predecir o sutiles

Rápido

USABILITY TESTING

Combinación de métodos (que hemos visto!)

- Experimentos
- Observación
- Entrevistas
- Cuestionarios

Objetivo: saber si el producto es usable por los usuarios y si están satisfechos/as con la experiencia

+

para ciertos productos: si se disfruta la experiencia, si es divertido, …

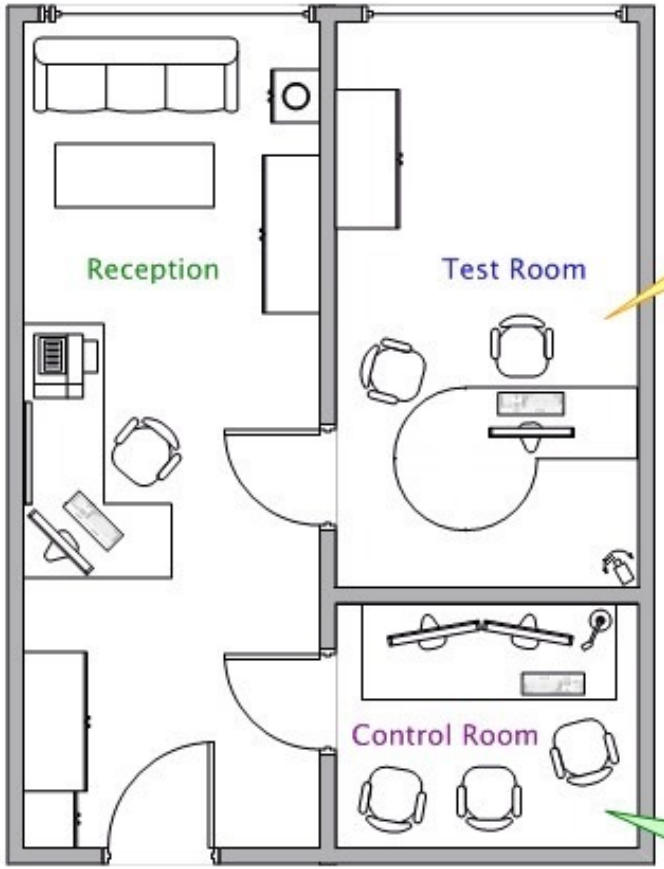
USABILITY TESTING

Quantitative performance mesasures (Wixon y Wilson 1997)

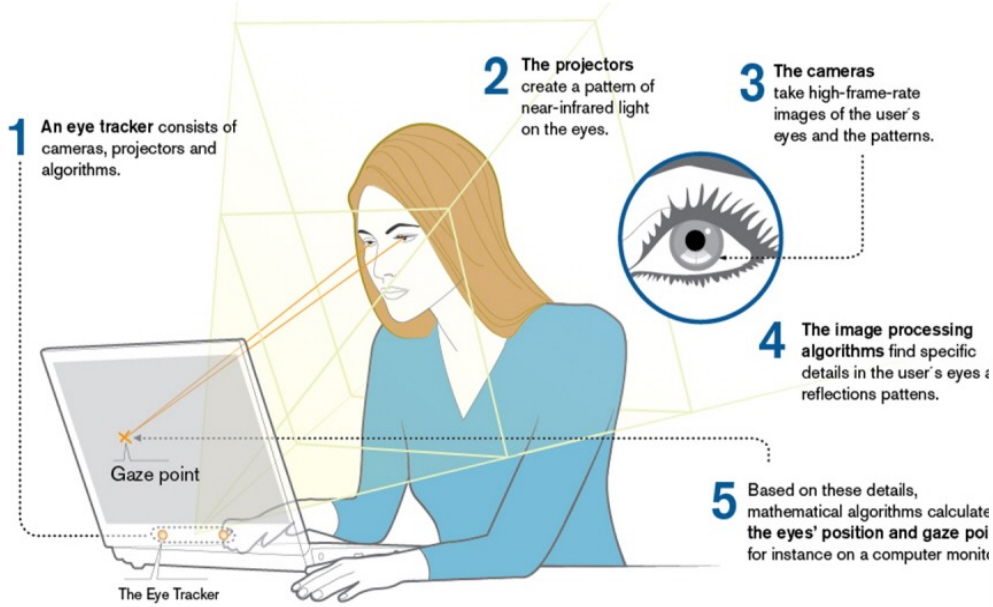
- Number of users completing a task successfully
- Time to complete a task
- Time to complete a task after a specified time away from the product
- Number and type of errors per task
- Number of errors per unit of time
- Number of navigations to online help or manuals
- Number of users making a particular error

Data (e.g. video incluyendo expresiones faciales, keystrokes, movimientos de mouse como swiping y dragging) + cuestionario de satisfacción de usuario + entrevistas estructuradas o semi estructuradas + observación sobre cómo se usa en el 'campo' (lugar real)

USABILITY TESTING



USABILITY TESTING



USABILITY TESTING

Dos bandos:

- Experimentos controlados (académico; 2 tratamientos; diferencias significativas)
- Usability tests (practitioners; encontrar problemas; refinar interfaces rápido; 3? participantes)

Software de logging (typing, mousing, reading displays, reading manuals, etc) por observadores, w/automatic timestamping

- Adobe Prelude Live Logger, Morae –TechSmith, LogSquare –Mangold, Bit Debris, Observer XT, Ovo Logger

CONTROLLED SETTINGS: EXPERIMENTOS

Testeo de hipótesis

Diseño experimental

Test estadísticos

Rigurosidad y confianza (p.ej que una opción de interfaz será más rápida que otra)

A/B TESTING

Experimento con muchos participantes donde se evalúa cómo dos grupos de usuarios hacen algo usando dos diseños diferentes (… grupo control y experimental)

Between subjects

Diferencia con experimentos: escala, online.

NATURAL SETTINGS: FIELD STUDIES

Settings naturales – sin control sobre actividades de participantes

- En especial para aplicaciones y dispositivos que se usan en ambientes fuera de oficinas!

"Messy" – interrupciones, actividades con traslapes, lluvia, etc. Por lo tanto no hay tanta certeza/confianza!

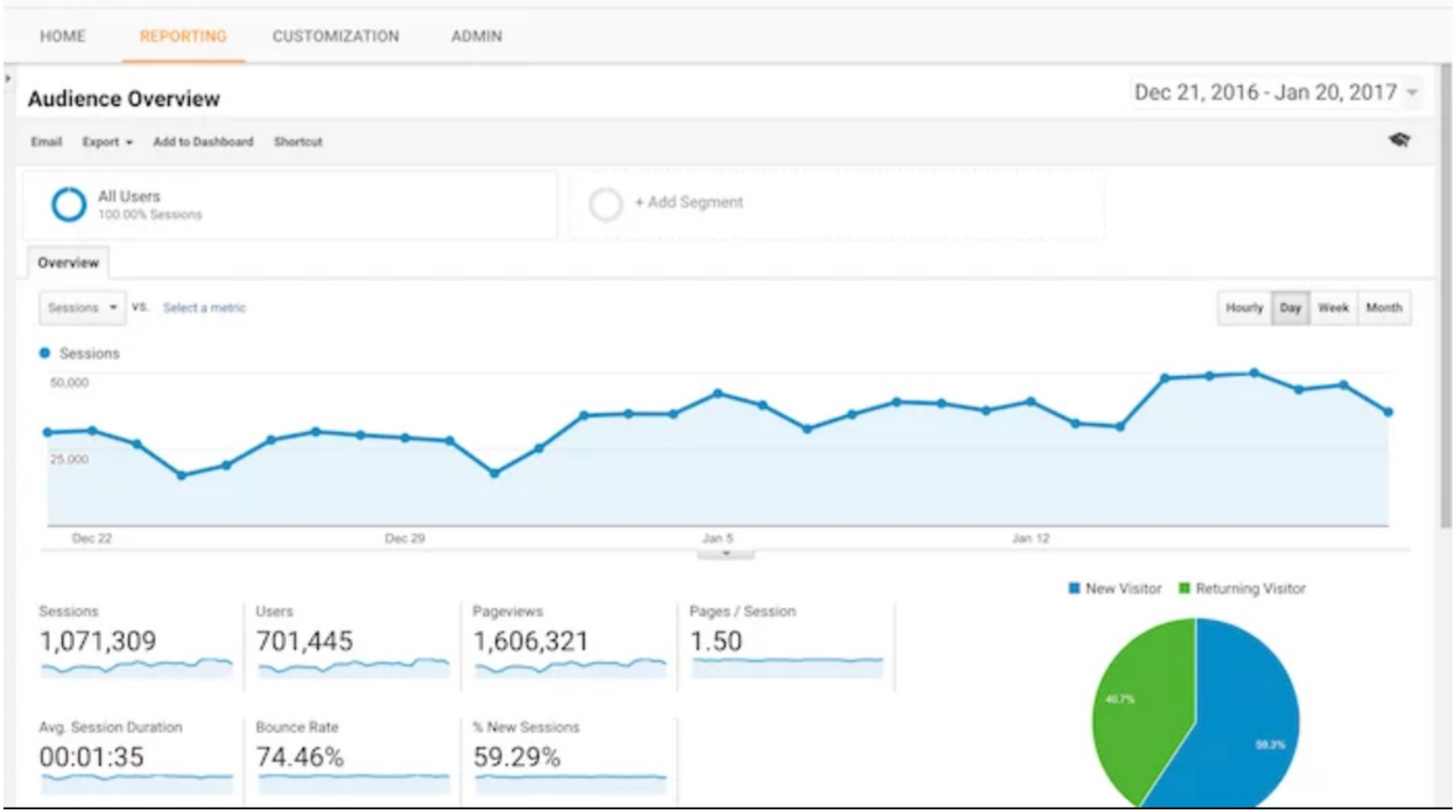
Duración: Minutos hasta años.

Métodos:

- Observación
- Entrevistas
- Recolección de audio, video, notas de campo, fotos, diarios, …

In the wild studies: cómo se usan las tecnologías in situ – que incluso cambian comportamiento de usuarios. Han mostrado que aunque lo estudies en el lab, puede haber mucha diferencia a lo que pasa "in the wild".

ANALYTICS


HOME
REPORTING
CUSTOMIZATION
ADMIN
Audience Overview
Dec 21, 2016 - Jan 20, 2017
Email
Export
Add to Dashboard
Shortcut
All Users
100.00% Sessions
+ Add Segment
Overview
Sessions
vs.
Select a metric
Hourly
Day
Week
Month
Sessions
50,000
25,000
Dec 22
Dec 29
Jan 5
Jan 12
New Visitor
Returning Visitor
Sessions
1,071,309
Users
701,445
Pageviews
1,606,321
Pages / Session
1.50
Avg. Session Duration
00:01:35
Bounce Rate
74.46%
% New Sessions
59.29%
40.7%
59.3%

NOT INV. USERS: HEURISTIC EVALUATION

Heurísticas de Nielsen (https://www.nngroup.com/articles/ten-usability-heuristics/)

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

(Read full article on preventing user errors.)

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

(Read full article on recognition vs. recall in UX.)

Flexibility and efficiency of use

Accelerators — unseen by the novice user — may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

HEURISTIC EVALUATION PARA TEMAS ESPECÍFICOS

Table 1. List of 35 heuristics

O	F	Heuristic Description
		Cognition
H1	H1	Focus on one task at a time instead of requiring the user to actively monitor two or more tasks, and clearly indicate the name and status of the task at all times.
H2	H2	Avoid the use of interaction timeouts and provide ample time to read information.
H3	H3	Avoid the use of animation and fast-moving objects.
H4	H4	Leverage mental models familiar to older adults.
H5	H5	Reduce the demand on working memory by supporting recognition rather than recall.
H6	H6	Aim at creating an aesthetical user interface, by using pictures and/or graphics purposefully and adequately to minimize user interface clutter and avoid extraneous details.
		Content
H7	H7	Give specific and clear instructions and make help and documentation available. Remember that it is better to prevent an error than to recover from it.
H8	H8	Provide clear feedback and when presenting error messages make them simple and easy to follow.
H9	H9	Make sure errors messages are descriptive and use meaningful words and verbs when requiring an action.
H10	H10	Write in a language that is simple, clear and adequate to the audience.
		Dexterity
H11	H11	Avoid pull down menus.
H12	H12	Avoid the use of scrolling.
H13	H13	Enlarge the size of user interface elements in general; targets should be at least 14mm square.
		Navigation
H14	H14	Keep the user interface navigation structure narrow, simple and straightforward.
H15	H15	Use consistent and explicit step-by-step navigation.
	H16	Make sure that the "Back" button behaves predictably.
	H17	F: Support user control and freedom, allowing for alternative and flexible flows of interaction. O: Support user control and freedom.
	H18	Disable inactive user interface objects.
		Perception
	*	Allow users to fine tune the volume.
	H19	Do not rely on color alone to convey information. Be aware of color blindness.
	H20	Provide not only visual feedback, but also tactile and auditory.
	H21	Make information accessible through different modalities.
	H22	Use lower frequencies to convey auditory information such as confirmation tones and alerts.
	H23	Do not use pure white or rapidly changing contrast backgrounds.
	H24	Make it easy for people to change the text size directly from the screen.
	*	Allow users to fine-tune screen brightness and contrast.
		Visual Design
	H25	Use high-contrast color combinations of font and/or graphics and background to ensure readability and perceptibility; avoid using blue, green and yellow in close proximity.
	H26	Use color conservatively, limiting the maximum number of colors in use to ~four.
	H27	F: Make sure text uses types, styles and sizes appropriate to older adults, that is, for instance, but not exclusively: large-sized fonts, sans serif, non-condensed typefaces, non-italic, and left justified. O: Make sure text uses types, styles and sizes appropriate to older adults, for instance, but not exclusively: sans serif, non-condensed typefaces, non-italic, left justified and 12-14 point font.
	H28	Make links and buttons clearly visible and distinguishable from other user interface elements.
	H29	Make information easy to read, skim (or) and scan.
	H30	Group information visually (make good use of color, text, topics, etc.).
	H31	Allow sufficient white space to ensure a balanced user interface design.
	H32	Use user interface elements consistently and adhere to standards and conventions if those exist.
	H33	Use simple and meaningful icons.

e: * - Removed from final validated list; **- Heuristic revised after evaluation; O – Original: F - Final

HEURISTIC EVALUATION PARA TEMAS ESPECÍFICOS

Table 4. Networked game heuristics. Each heuristic is listed with a paragraph describing how common problems can be avoided.

1. Simple session management: provide session management support that allows players to start new games, and that allows them to find and join appropriate games. Non-persistent games require session management support so that players can start and publicize new games, and so that they can filter and join appropriate games. Session management features should allow players to broadcast information about the game they are starting, including the type of player they are interested in (e.g. expert or novice) and the type of game play they are supporting (e.g. cooperative, competitive, capture-the-flag, etc.). When players are searching for games to join, they should be able to selectively filter games listings so that they can find one that is suitable for them, and they should be able to obtain additional relevant information about game servers (e.g. ping, number of players online).

2. Flexible matchmaking: provide matchmaking features to help people find players with similar interests. Games can provide two types of matchmaking support: they can help people find others inside large persistent game worlds, or they can help people find compatible people prior to starting a new game (usually in game lobbies). Designs should support the type of matchmaking that is appropriate for the game (for persistent or transient games, respectively). In both cases, support should be provided for discovering whether a player's friends are online and for helping to locate them. Games should also provide communication support and other features that help players find strangers who have similar game play goals or experience so that they can put together an ad-hoc group or game.

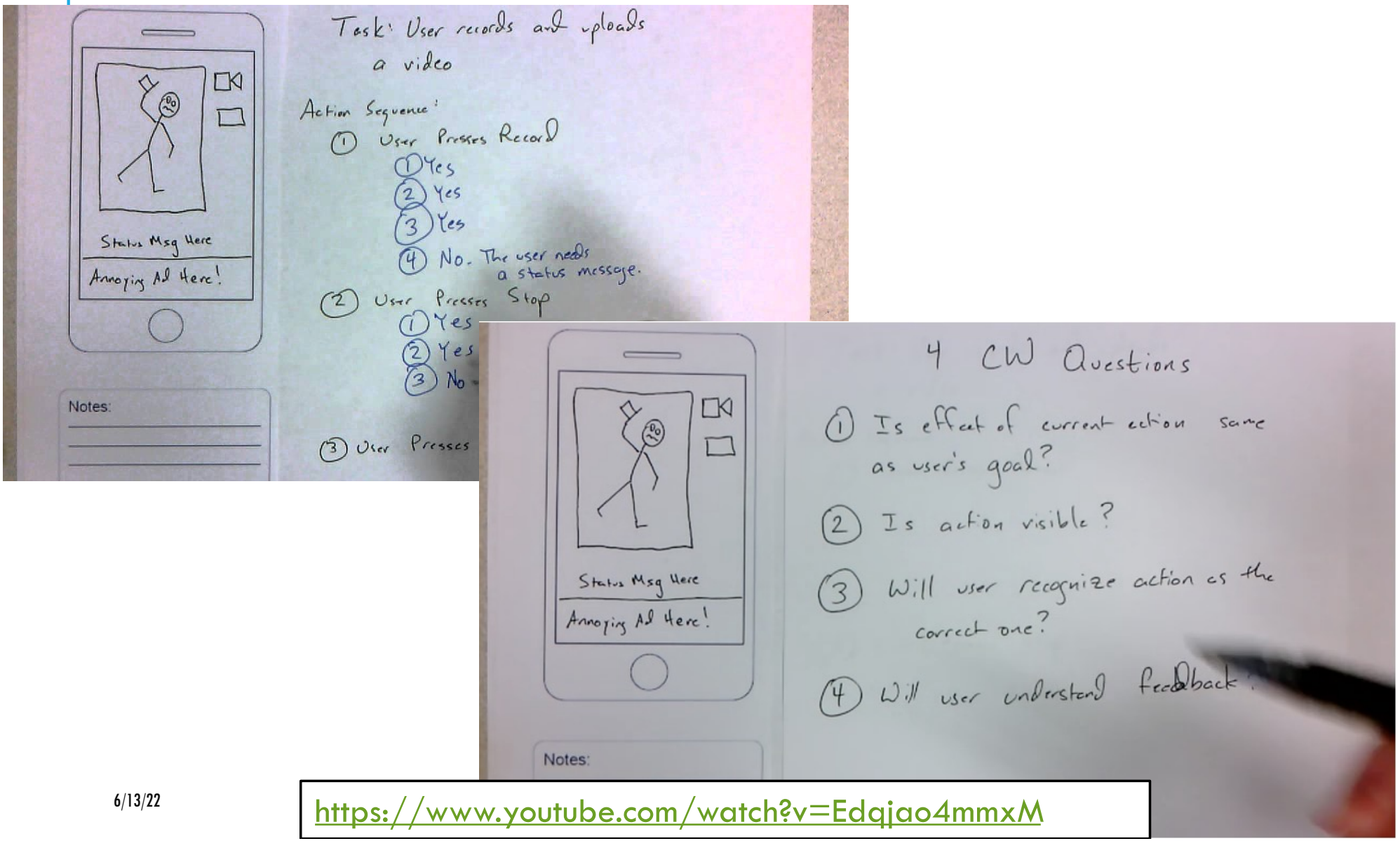
3. Appropriate communication tools: provide communication features that accommodate the demands of game play. Most multiplayer games allow player to communicate using text or voice channels. The choice of channel and the design of the communication interface should be appropriate for the input demands of the game. In games that require constant interaction, it is often difficult to access communication features, so text communication tools that require mode switching can be difficult to use. Possible ways to reduce communication overhead include shortcut keys that trigger commonly used text phrases, open voice channels, and well-designed interfaces that do not take the user's attention away from events in the game.

4. Support coordination: provide features that allow players to coordinate their actions during cooperative game play. When games support cooperative play, players usually must coordinate their actions to succeed. Designers should provide coordination features that allow players to seamlessly conduct shared activities in the game. Common examples of coordination features include interfaces for: distributing treasure among teammates, planning and communicating intentions, and managing command structures in teams.

5. Meaningful awareness information: provide meaningful information about players, including information about action, location, and status. Games should supply players with enough information to allow them to understand the activities of others, and the information should be presented so that it is easy to access and understand. Awareness information can be presented either asynchronously or synchronously. Asynchronous awareness information includes information about players' statistics (e.g. wins, losses, points scored, etc.) or about their ranking. Synchronous awareness information helps people understand what is currently happening in a game, and examples include features to inspect other characters' inventories and features to help track teammates (e.g. mini-maps and other visual indicators).

6. Identifiable avatars: use noticeable and distinct avatars that have intuitive information mappings. Many games use avatars to convey information about player presence, location, and movement. Avatars usually have several visual indicators that encode information about each player (e.g. avatar color can be used to represent team, and size can be used to represent the character's strength), and selected mappings should be simple and easy to interpret. Avatars should also be noticeable, providing a strong sense of presence so that players know when others are nearby, and they should be visually distinct so that players do not confuse team membership and player identity

NOT INV. USERS: WALKTHROUGH



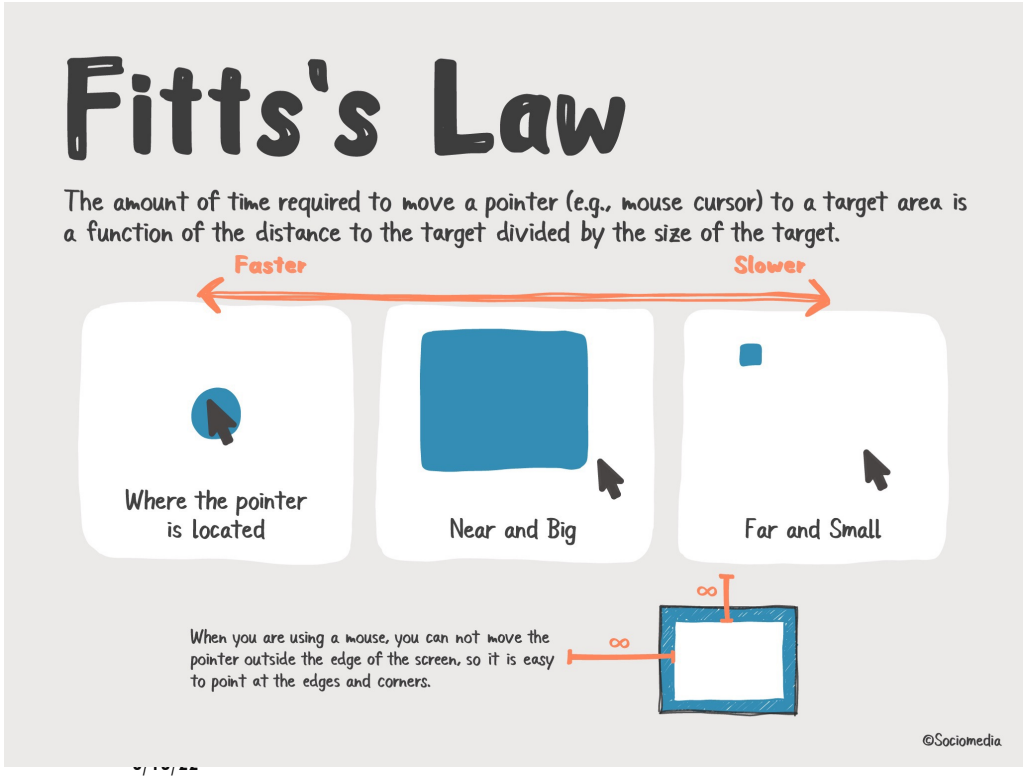
https://www.youtube.com/watch?v=Edqjao4mmxM

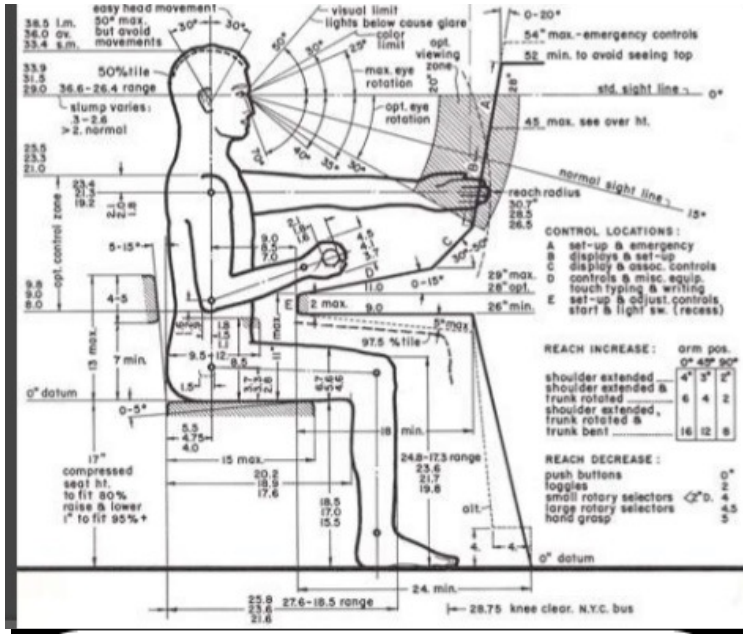
PREDICTIVE MODELS

Sin usuarios

Usan fórmulas para medir performance de usuarios

Basado en human factors

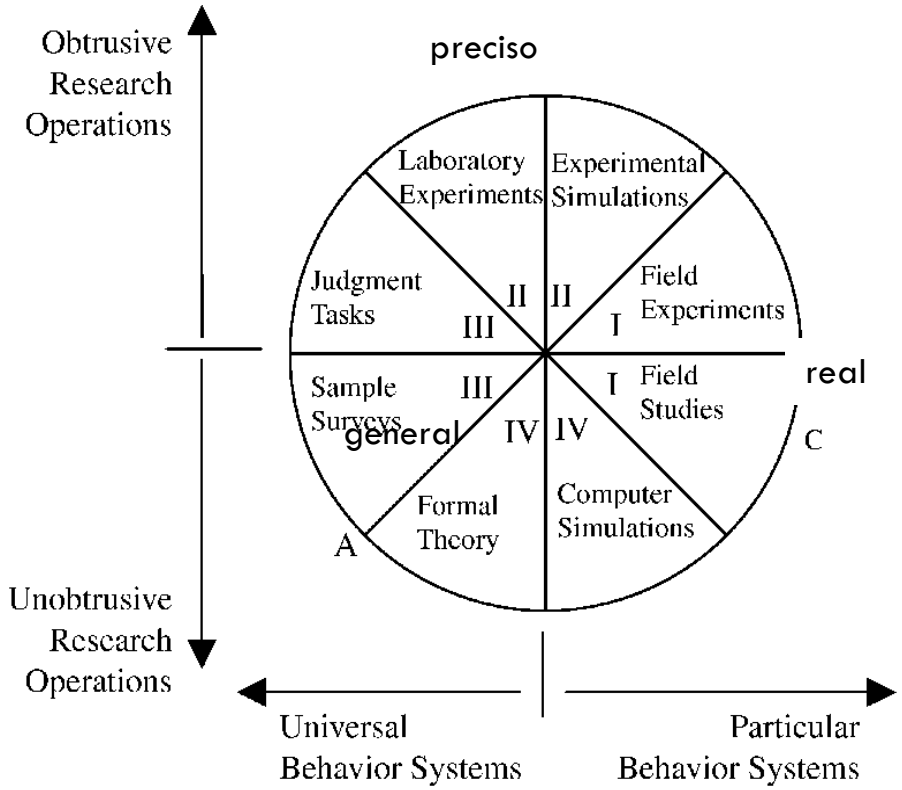




"**Ergonomics** *is a body of knowledge about human abilities, human limitations, and other human characteristics that are relevant to design."* [1]

"**Human factors** *focuses on human beings and their interactions with products, equipment, facilities, procedures, and environments used in work and everyday living."* [2]

ESTRATEGIAS DE INVESTIGACIÓN



Source: McGrath(1981)

I. Settings in natural systems

II. Contrived and created settings

III. Behavior not setting dependent

IV. No observations of behavior required

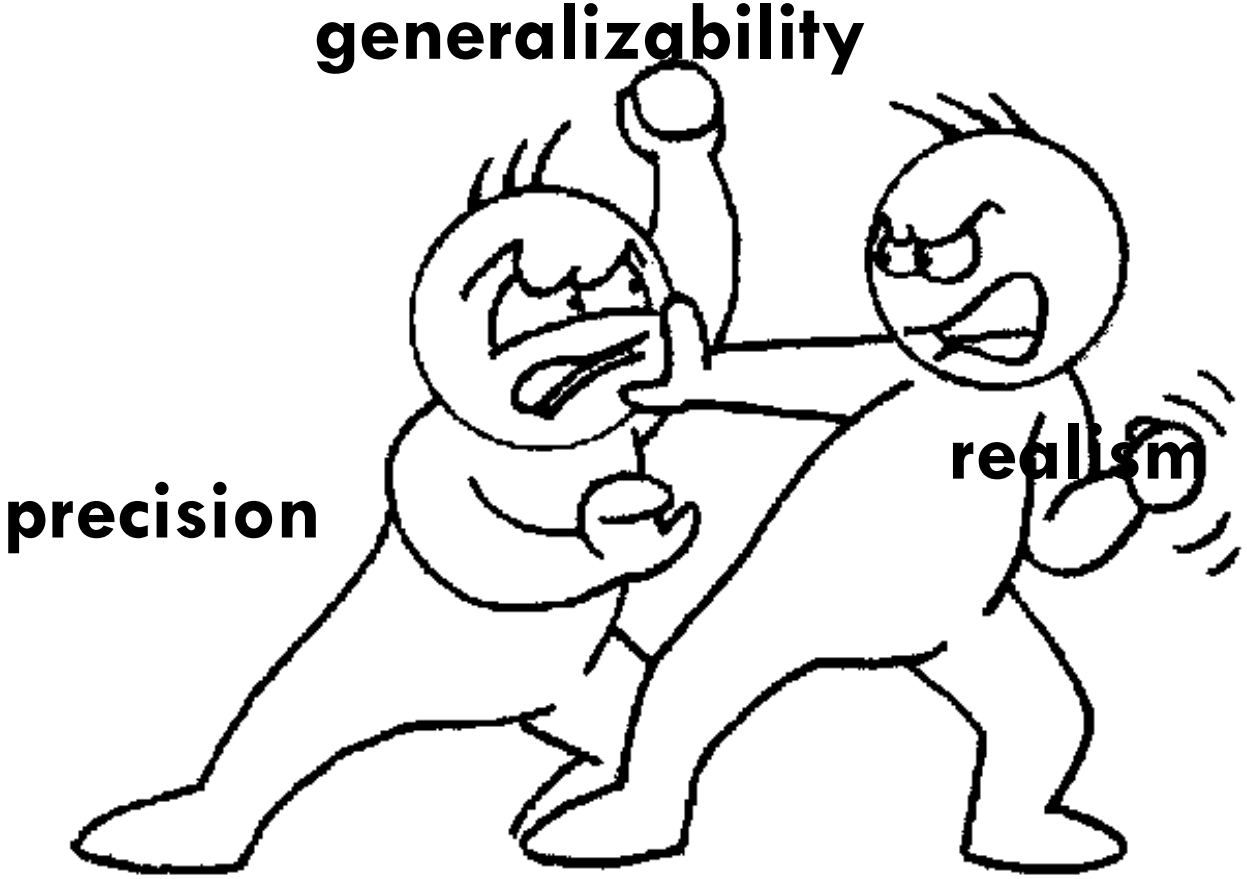
A. Point of maximum concern with generality over actors

B. Point of maximum concern with precision of measurement behavior

C. Point of maximum concern with system character of context

[McGrath 1984]

TENSIÓN… EN ESTRATEGIAS DE INVESTIGACIÓN



[McGrath 1984]