USER TESTING

WHAT IS OUR QUESTION?

Questions:

Discuss in groups and list as many responses as possible to the questions below

1. Why do we play games?

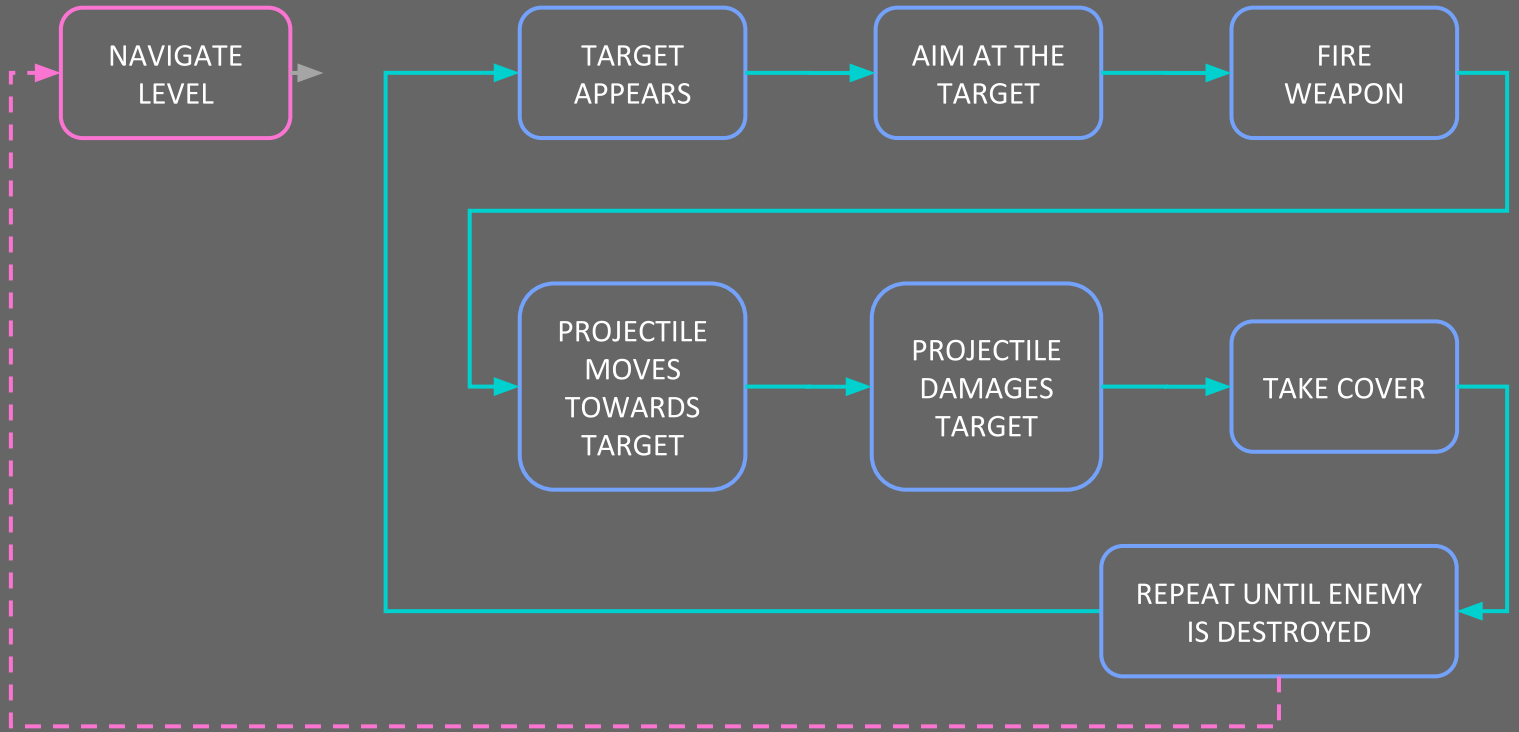
2. What makes games fun?

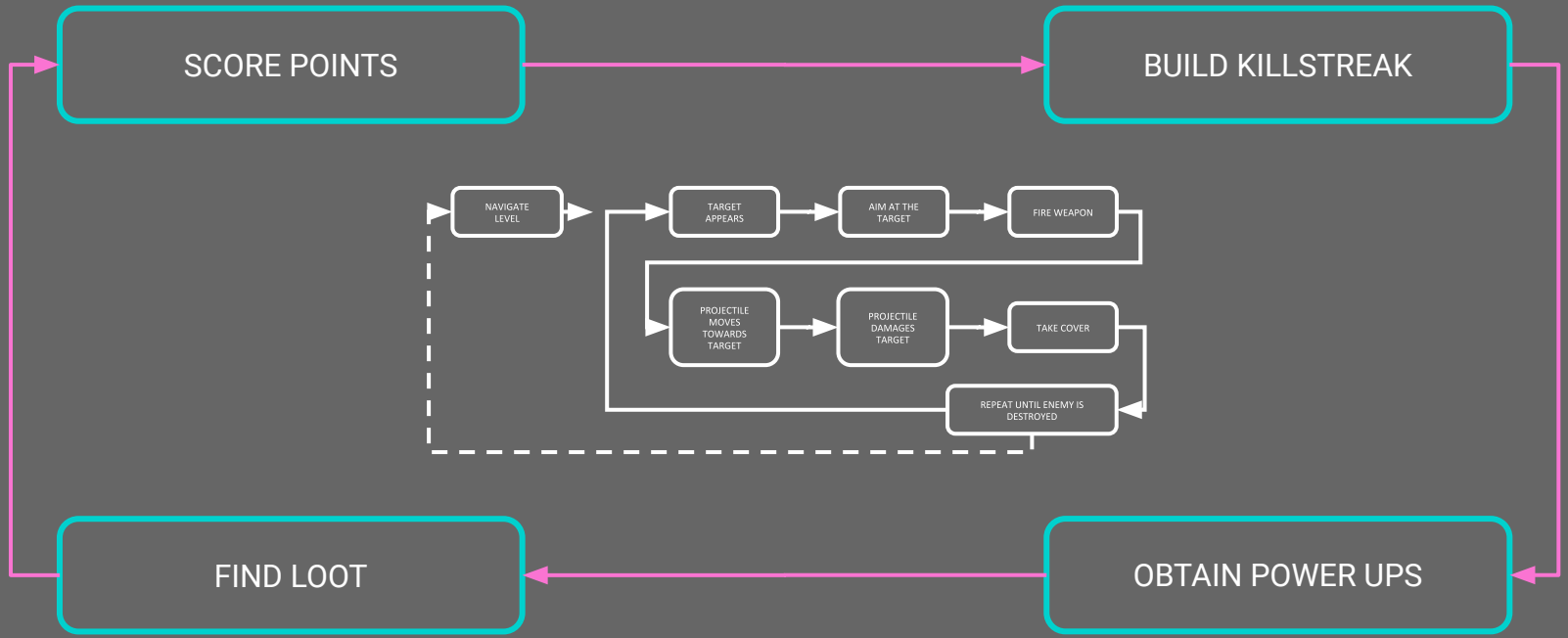
Game Loops

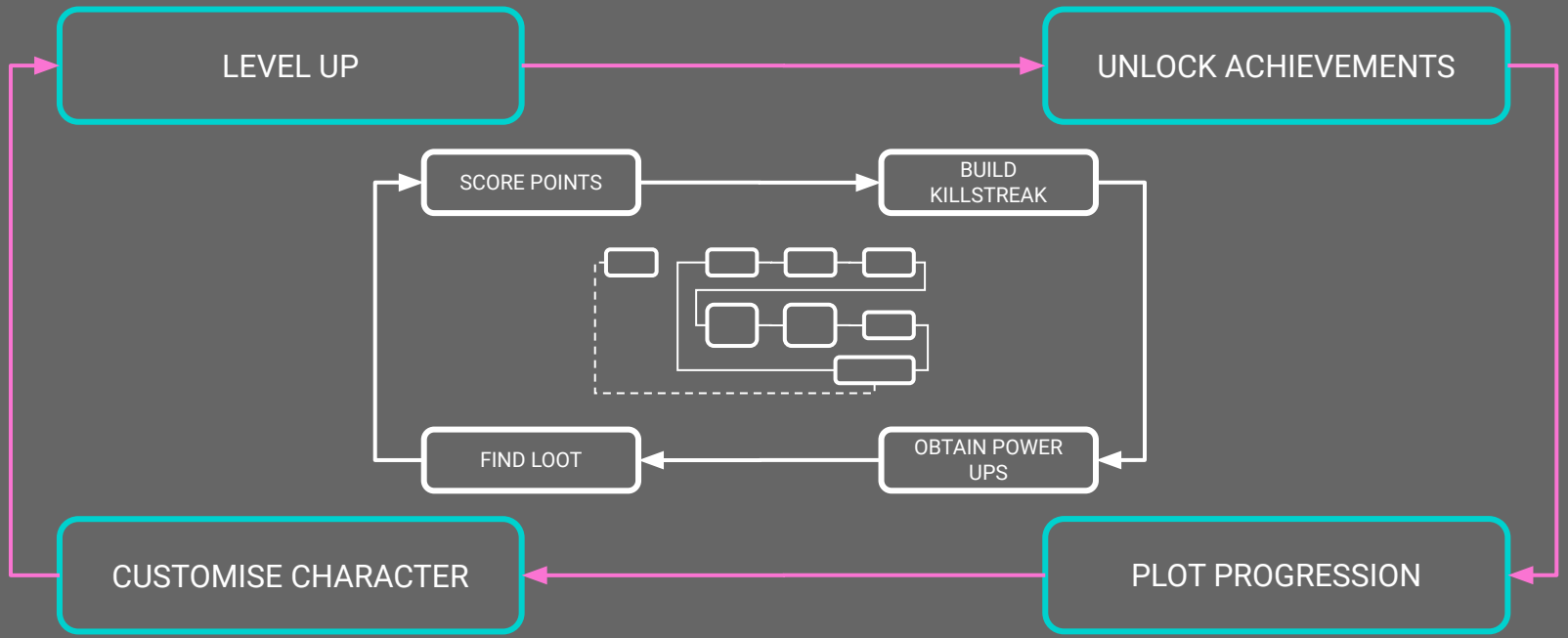
"There are several loops that structure your projects, depending on the lenses you use. Just like there's a core gameplay loop, there are core economic loops that will derive from your business models (or vice-versa), level design loops, what the player must do to beat a level and advance in the game's main plot, etc. Game loops also depend on the timeframe you focus on. They exist on a moment-to-moment basis, can last a few minutes, etc. They echo the player's short, mid and long-term goals. E.g. Collecting coins, beating the level, reaching and beating the end boss." (Lovato, 2018)

REFERENCES

Lovato, N. (2018). How to Perfect your Game's Core Loop - GameAnalytics. [online] GameAnalytics. Available at: https://gameanalytics.com/blog/how-to-perfect-your-games-core-loop.html [Accessed 5 Nov. 2018].


NAVIGATE LEVEL
TARGET APPEARS
AIM AT THE TARGET
FIRE WEAPON
PROJECTILE MOVES TOWARDS TARGET
PROJECTILE DAMAGES TARGET
TAKE COVER
REPEAT UNTIL ENEMY IS DESTROYED


SCORE POINTS
BUILD KILLSTREAK
NAVIGATE LEVEL
TARGET APPEARS
AIM AT THE TARGET
FIRE WEAPON
PROJECTILE MOVES TOWARDS TARGET
PROJECTILE DAMAGES TARGET
TAKE COVER
REPEAT UNTIL ENEMY IS DESTROYED
FIND LOOT
OBTAIN POWER UPS


LEVEL UP
UNLOCK ACHIEVEMENTS
SCORE POINTS
BUILD KILLSTREAK
FIND LOOT
OBTAIN POWER UPS
CUSTOMISE CHARACTER
PLOT PROGRESSION

Introduction

Our amazing ideas require testing. Generally if you are doing software development of any kind, you will need to evidence that your creation is fit for purpose. With game technologies, you will be managing not only features, but also graphical and audio interactions that change and develop over time.

User testing enables us to get real world feedback on our software. We should not wait until the software is complete before we week such feedback. Information early in development can save us from investing resource in features and implementations that do not work.

Broad or Specific

Throughout your testing, there is benefit to evaluating how users respond to the overall package. Useful information can also be gleaned from user testing specific functions without the distraction of other features.

To help decide what to test, you must understand where you are in development and what is actually useful information to inform the stage you are at. For example, if you are prototyping a new idea or function, you may want to focus on that specific feature. If you are further down the line in development, and want to test user experience, you may want to show the user the entire product.

What you must avoid is simply showing the showing a user your software and expect them to give you all the information you need. The effort is not on the user to work out the effectiveness of the application but on the creator with thoughtful questions and well planned testing set up to **facilitate** useful information.

You will therefore need a plan.

Introduction

The exact definition of UX is an ongoing debate (Hassenzahl & Tractinsky, 2006, Law et al. 2009).

User Experience (UX) describes how the interactions with technology influence a user's state of mind and therefore perception of the technology. User experience can be positive or negative. Since most people will be drawn by positive emotional states and avoid negative emotional states, a good UX will increase the chance of people using your software and perceiving quality. Likewise, a poor UX will decrease the chance of your software being used, even when the functionality is feature rich.

However, it can be difficult to identify what details of a project effect UX as the term "User Experience" is often used loosely towards "**fuzzy and dynamic concepts**" (Law et al. 2009) that combine HCI, design, and functionality. For this reason, we need some clarity on what UX is, identify some UX goals for the software we create, and take these goals through the design process.

REFERENCES

Hassenzahl, M. and Tractinsky, N., 2006.User experience-a research agenda.*Behaviour & information technology*,*25*(2),pp.91-97.doi: https://doi.org/10.1080/01449290500330331

Law, E., Roto, V., Hassenzahl, M., Vermeeren, A. & Kort, J. (2009). Understanding, scoping and defining UX: a survey approach. In *Proceedings of the ACM conference on human factors in computing systems (CHI 2009)*, Boston, USA. doi: http://dx.doi.org/10.1145/1518701.1518813.

UX will be dependent on many factors. However understanding how UX links to both usability and functionality will help to break down the implementation of UX.

Functionality

A range of features that a piece of software can run.

Usability

“The extent to which a system, product or service can be used by **specified users** to achieve **specified goals** with effectiveness, efficiency and satisfaction in a **specified context of use**” (ISO 9241-11, 2018). Therefore, usability describes how effective a feature is in achieving its function.

REFERENCES

ISO 9241-11 (2018) Ergonomics of human-system interaction - Part 11: Usability: Definitions and concepts. Geneva: ISO. [online] Available at: https://www.iso.org/standard/63500.html [Accessed 20 Sep. 2018]

USER TESTING | UX OR FUNCTIONALITY

Defining the goal of the users mental state first can help detail the usability and functionality of a feature set to meet those goals.

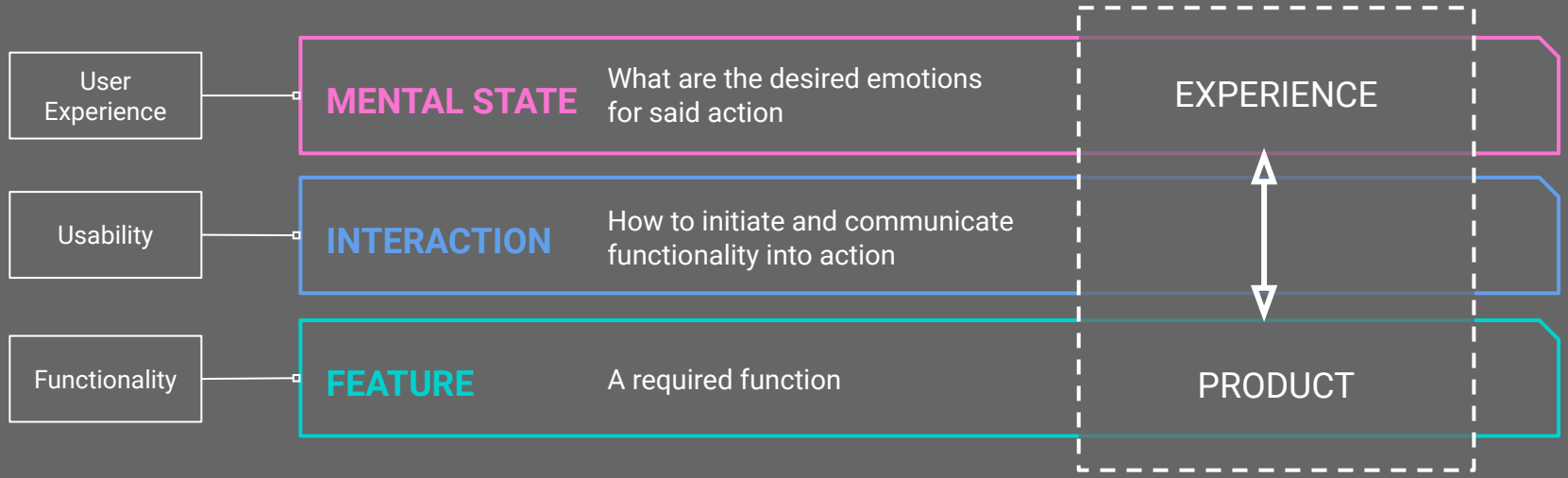
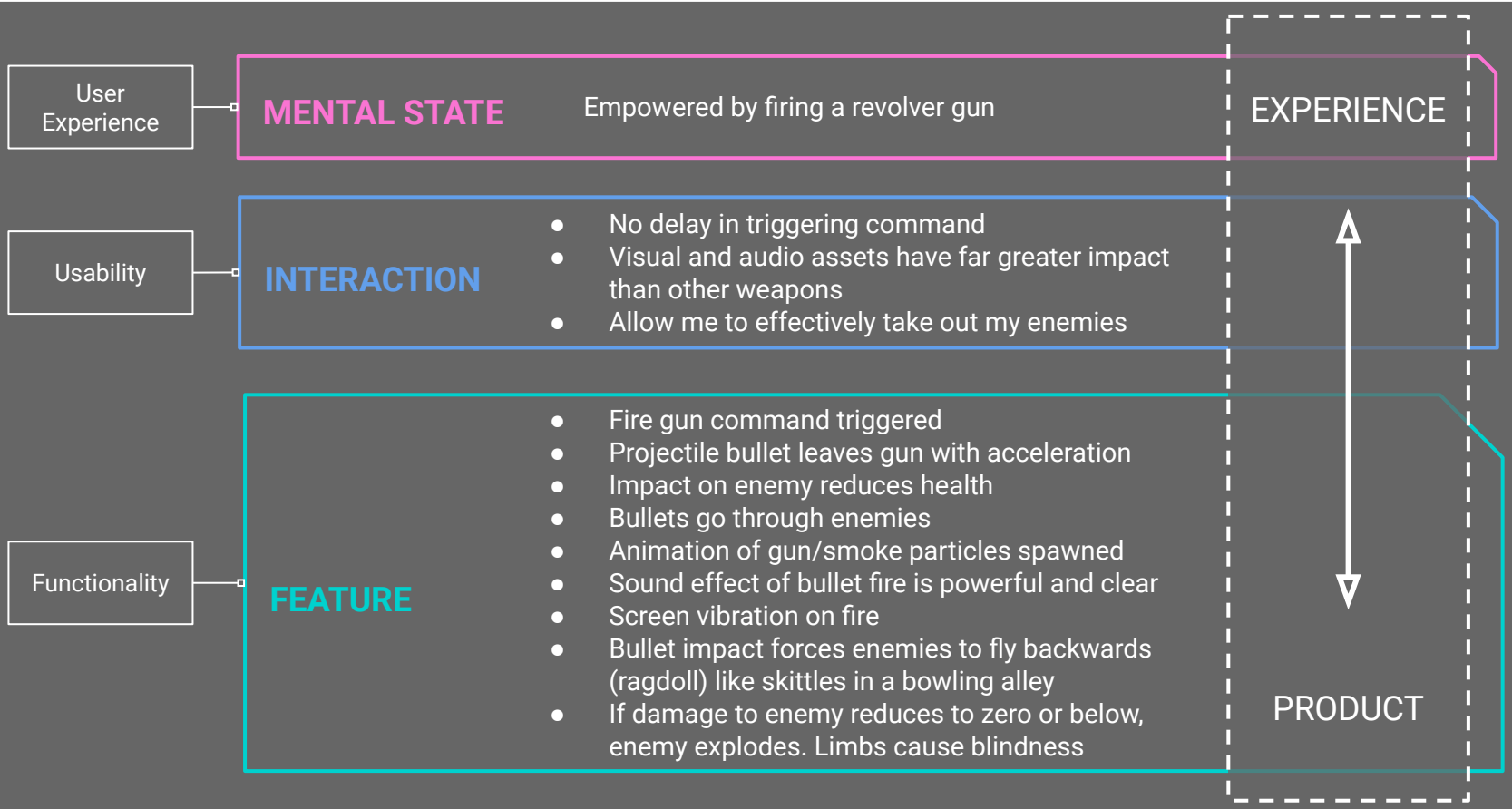


Diagram adapted from work done by Hassenzahl (2013)

REFERENCES

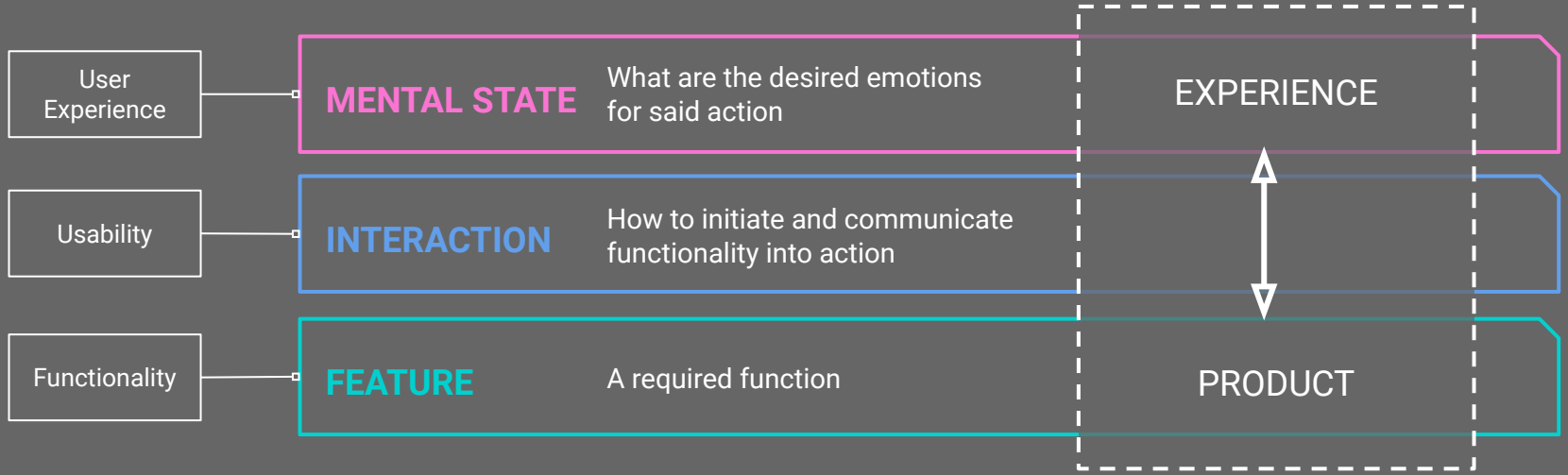
Hassenzahl, M. (2013). User experience and experience design. In: Soegaard, Mads and Dam, Rikke Friis (Eds.). "*The encyclopedia of human–computer interaction, 2nd Ed.*" Aarhus, Denmark: The Interaction Design Foundation. <https://www.interaction-design.org/encyclopedia/user_experience_and_experience_design.html>.

USER TESTING | EXAMPLE



ACTIVITY:

Choose a game genre and identify a gameplay loop within. Chose a UX goal for that loop and describe the usability and functions are required to achieve this.



USER TESTING

COLLECTING THE RIGHT DATA

Separate Function from UX

You can test many aspects in one user testing session. This may mean setting up multiple experiments/project files with bespoke questions and data collection. Again think about what you need to test to aid your project. Have you proven that all your features are fit for purpose.

Functionality

This will focus on evaluating function reliability and performance in regards to the function goal. Both perceptions of the user and in game analytics can give you some data on function effectiveness

Usability

Evaluate the perception of how effective and efficient the interactions with your functions are. This can be focused on one function or a set of features. What is important is that you have a clear idea of the goal of the set of functions to evaluate how useful they are. Functionality testing may inform aspects of usability. Observe users and survey/interview them for perceptions on usability.

User Experience (UX)

To test user experience, you must have a clear understanding of UX goals. It is difficult to test individual functions to inform the whole UX. Therefore, testing should focus on the overall experience and then working out details that might have created said experience.

Interviews and observations are good tools for data gathering. Also triangulation of data from function and usability testing will help inform UX.

Overview

When you have established what you want to test, you must then work out what data will evidence an answer to you test scenario.

Software Analytics

Metrics you can record within your product to inform user interaction. For example, how long does it take for a user to solve a puzzle? In a zombie shooter, where do users die most frequently? Both these types of analytics could help you investigate level/challenge difficulty.

What do users click on/Interact with. What is the order in which users navigate interactions? Where do users spend time?

The more appropriate the metrics to the question, the easier to interpret.

Observations

Observing users on your software can give you insight into their reactions to your project. If someone appears excited or frustrated with your software, you may be able to infer details about UX, difficulty etc.

You can also see how and in what order a user may interact with your functions.

However, users can be polite or change their behaviour when they know that they are being watched by another human. Ways around this are to use screen captures or video recording for observations. Also, by having two users at once, users are more honest in how they talk to each other about said software.

Capturing this data can be difficult and may give you ideas for further questions in an interview. So be ready to ask follow up questions, record the observation whilst also being "**ninja**" in your approach.

Interviews

Interviews facilitate in depth conversations about the user's experience with the software. The benefit of interviews is that you can ask questions based on the response of the user tester to clarify experience.

Always prepare a set of base questions.

You may find it easier to audio record interviews so your attention is on the conversation, not transcription

Surveys

A set of questions which must be easily understandable by a user tester. Great for simple information like demographic data (do different user attributes correlate to other testing criteria?).

Also good for direct questions which can have long answers. However, does not allow follow up questions.

Likert Scales

Likert scales are a survey used to gauge user tester's attitude towards a topic. The scale normally ranges between 5-7 points. For example:

How tired are you when attending a 09:00 Lecture?

Very Tired ☐ Tired ☐ Average ☐ Awake ☐ Very Awake ☐

This type of data is fairly easy to analyse as you can assign a numerical value to each response. However, the difference between each point is subjective so using the modal average is recommended. In creating likert scales, it is recommend to ask the same question in a variety of ways for more accurate dat as question detail can be leading. For example, I would also add to the question above:

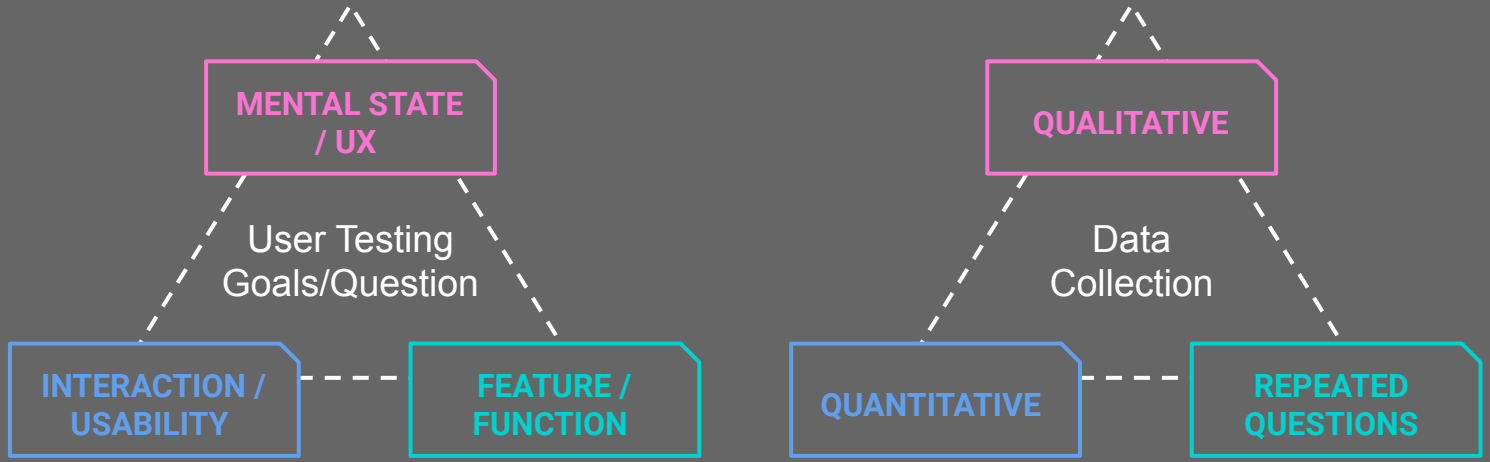
Do you feel energised for 09:00 lectures?

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

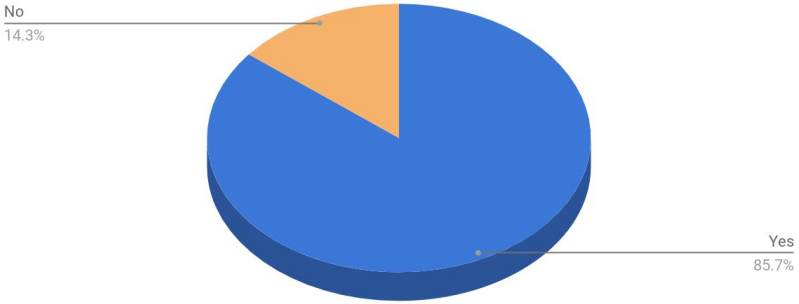
USER TESTING | TRIANGULATION

When user testing, you should be able to triangulate how the function, usability, and UX relate to your testing goals.

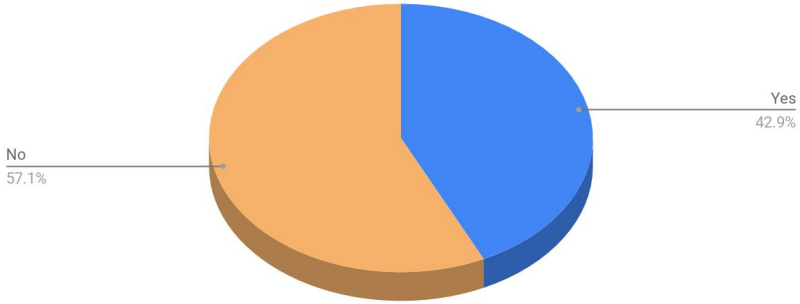
You should also be able to triangulate how different data points relate/justify/mediate your conclusions. In short, use more than one data point to clarify any assertions.



Would you prefer control of navigation and flow of information?



Did you find the lack of control in navigation and flow of information frustrating?



Information Type	Immerive (Mobile VR)	Desktop (Non-Immersive)	Desktop (Video)	Average across conditions (Mean)
Movement Recall %	73.61	63.61	71.43	69.55

Accurate Data from Users

You have established your user testing goals, planned a scenario that will help you user test these goals and worked out what data to gather. We are done?.... Not quite.

Your next task is to make sure that you can manage the expectation of the user tester so that they are in the right mental state to assess the details you want them to assess. Things to consider:

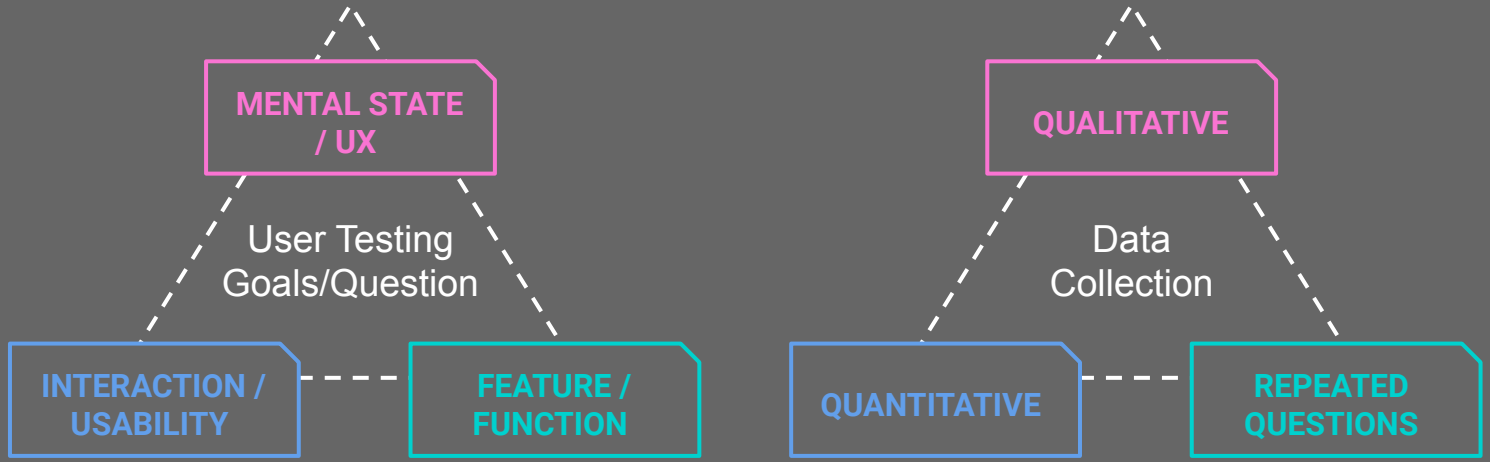
- ➔ Can you describe to the user what you want them to focus on, and what not to focus on?
- ➔ Can you give them a clear outline of events?
- ➔ Counterbalance testing activities to reduce any order effect.
- ➔ How tired is the user tester, have they been user testing for many hours? - A tired user tester may not have the energy to give you indepth answers and so may need more time and conversation to discuss experience.

Testing for Testing

➔ Do a pilot study to work through the methodology

ACTIVITY:

Using your previous breakdown of UX, usability and function for a game loop, describe a set of tests that could evaluate the implementation the UX of this loop.



THOUGHTS