

# katho

Katholische Hochschule **Nordrhein-Westfalen**  
Catholic University of Applied Sciences

## SOLVE – Gaming für Draufgänger!

Referenten: Nuri Wieland, Lina-Sophia Falkenberg & Carmen Johann



# Agenda

## **I. Kurzvorstellung**

- I. SOLVE
- II. Wir
- III. Sie

## **II. Worum geht es genau?**

- I. Psychologie
- II. Gaming

## **III. Wie sind wir dahin gekommen?**

- I. Interdisziplinärer Designprozess
- II. Prototypenentwicklung

## **IV. Was steht an?**

- V. Pilotierung
- VI. Feldphase & Evaluation

## **V. Was möchten Sie wissen?**

## Kurzvorstellung

### SOLVE\*

- Förderung
  - Bundesministerium für Bildung und Forschung
  - Förderzeitraum: 01.08.2019 – 31.07.2022
  - Förderkennzeichen: 13FH037SA7



#### Kooperationsprojekt zwischen

- KathO NRW | DISuP, Prof. Michael Klein
- TH Köln | Cologne Game Lab, Prof. Emmanuel Guardiola
- Universität Amsterdam | Prof. Reinout Wiers – AG Entwicklungspsychopathologie

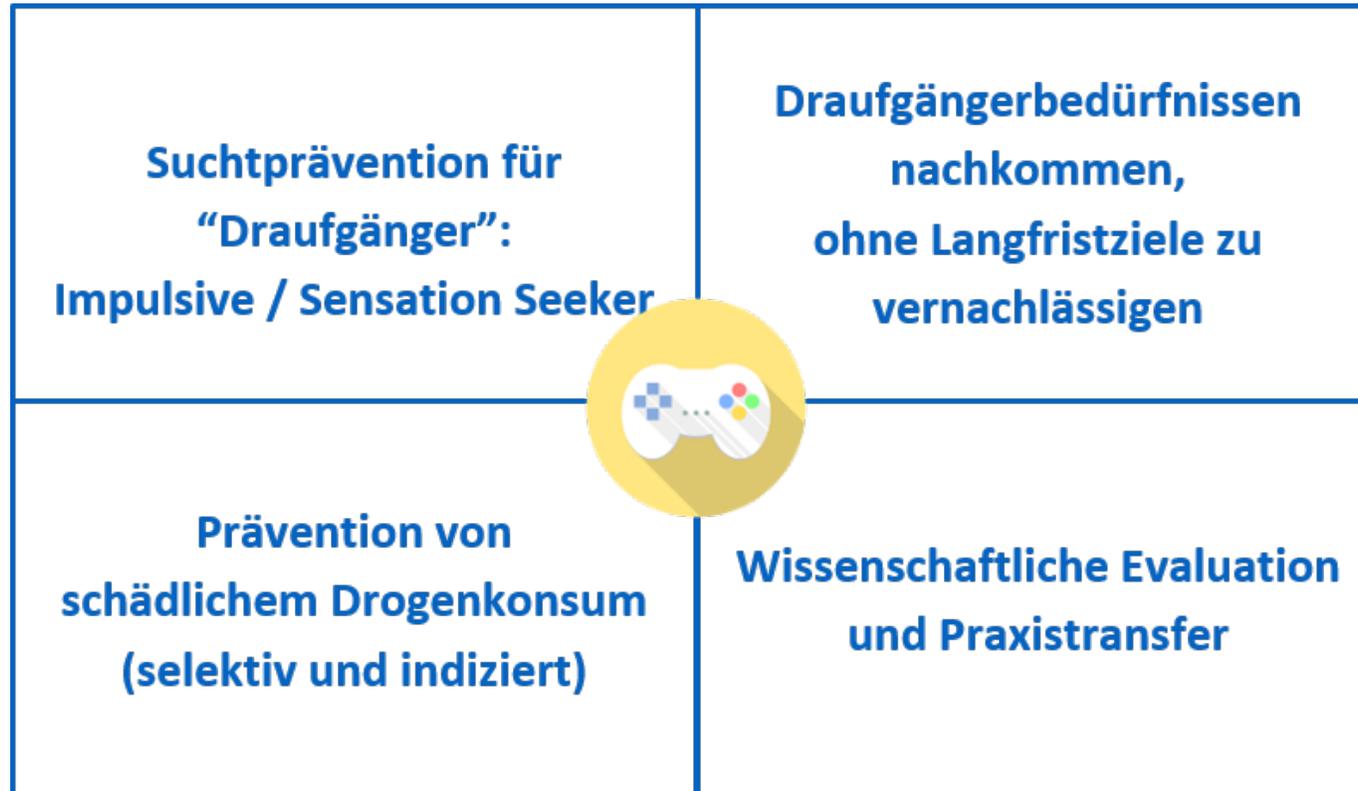


UNIVERSITEIT VAN AMSTERDAM

\*Entwicklung und Pilotierung einer innovativen spielbasierten Präventionsmaßnahme für Jugendliche mit einem erhöhten Risiko von Drogenmissbrauch und -abhängigkeit.

## Kurzvorstellung

### Ziele von SOLVE



## Kurzvorstellungung

### Wir - DISuP



**Prof. Michael Klein**  
PI



**Nuri Wieland**  
Wissenschaftliche  
Konzeption/Evaluation



**Lina-Sophia Falkenberg**  
Studienkoordination



**Lara Sobolewski**  
Wissenschaftliche  
Hilfskraft

## Kurzvorstellung

### DISuP

- praxisorientierte, angewandte sozialwissenschaftliche und psychologische Suchtforschung, insb. zur Suchtentstehung, -prävention und –behandlung seit 1999
- Schwerpunkte
  - Risikofaktoren in der Suchtentstehung,
  - Frühintervention/Prävention,
  - familiäre Risiken (Kinder aus suchtblasteten Familien)
  - Kognitive-behaviorale Interventionsansätze



## Kurzvorstellung

**Wir - CGL**



CGL  
Cologne Game Lab

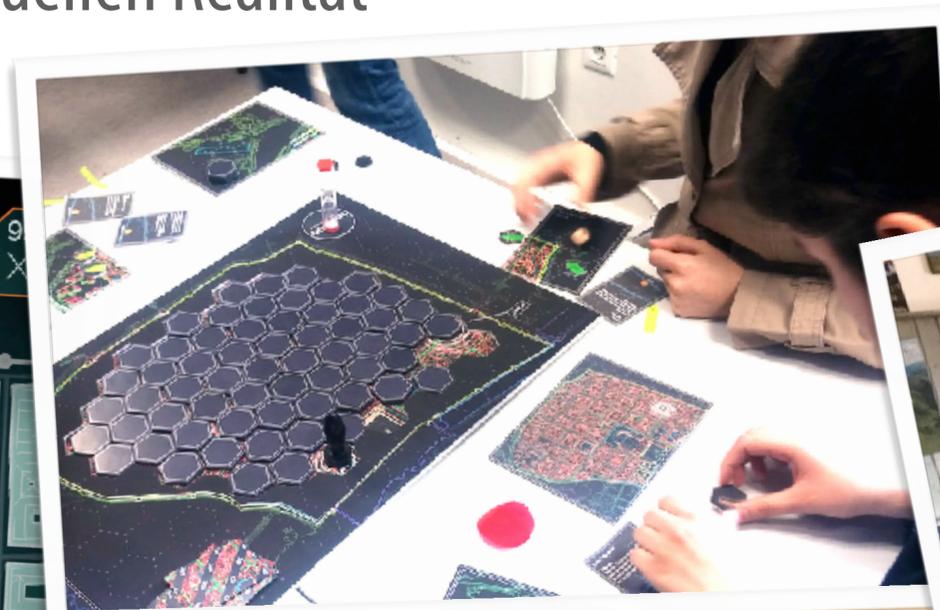
Technology  
Arts Sciences  
TH Köln

# UNSERE MISSION



# RESEARCH

→ Von digitalen Lernerfahrungen zur virtuellen Realität



# TEAM OF SOLVE



**Carmen Johann**  
Lead Game  
Designer



**Prof. Dr. Emmanuel  
Guardiola**  
Project Manager &  
Scientific Lead



**Rakibul Toor**  
Student Assistant,  
Game Design



**Luqman Asif**  
Programmer



**Hanna Steinhauer**  
Research Assistant  
Game design and  
playtest



**Kai-Ching Chang**  
Programming  
Technician



**Jan Krüner**  
Art Director



**Juan ORruela**  
Sound designer



**Sharon Edelstein**  
Scientific Assistant,  
playtest

# RESEARCH FOKUS CARMEN JOHANN

- 2013 B.A. Integrated Design (Alzheimer Aufklärung)
- 2014 Takomat (Simulationen Ökologie & Ökonomie)
- 2016 M.A. Game Development & Research  
(Simulation Biosphäre / Aquarium)
- 2016-2019 GLARS (Spiele im Ausbildungskontext)
- 2019 Pixelbeschleuniger - Spiel für Kinder im Alter von 5-11 Jahren über Trauerbewältigung mit therapeutischem Ansatz

# Quiz

## Sicht auf Jugendliche

Was denken sie ...

SOLVE | Workshop  
Carmen Johann

7

CGL  
Cologne Game Lab

Technology  
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## FRAGE 1

Was glauben Sie ist der prozentuale Anteil von  
Computerspielern\*innen in Deutschland je Geschlecht?

45%

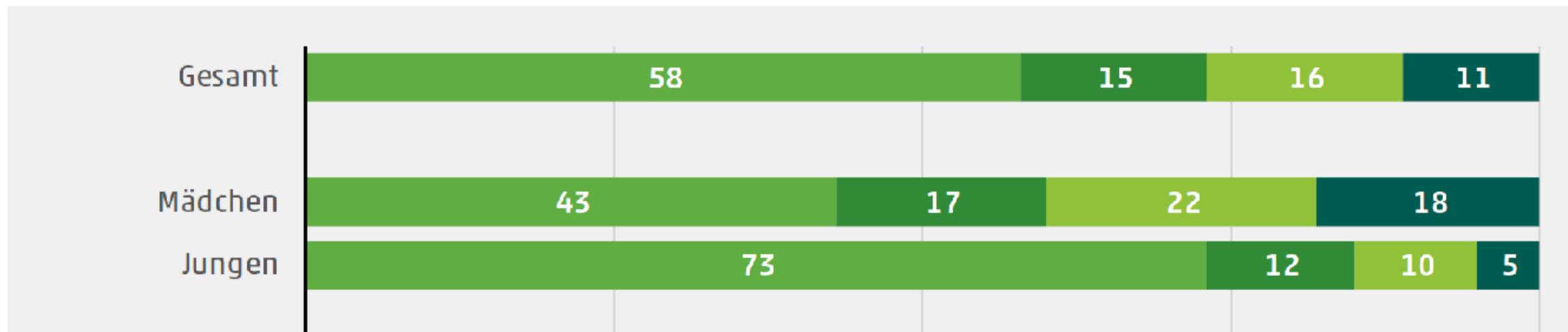
Männlich

41%

Weiblich

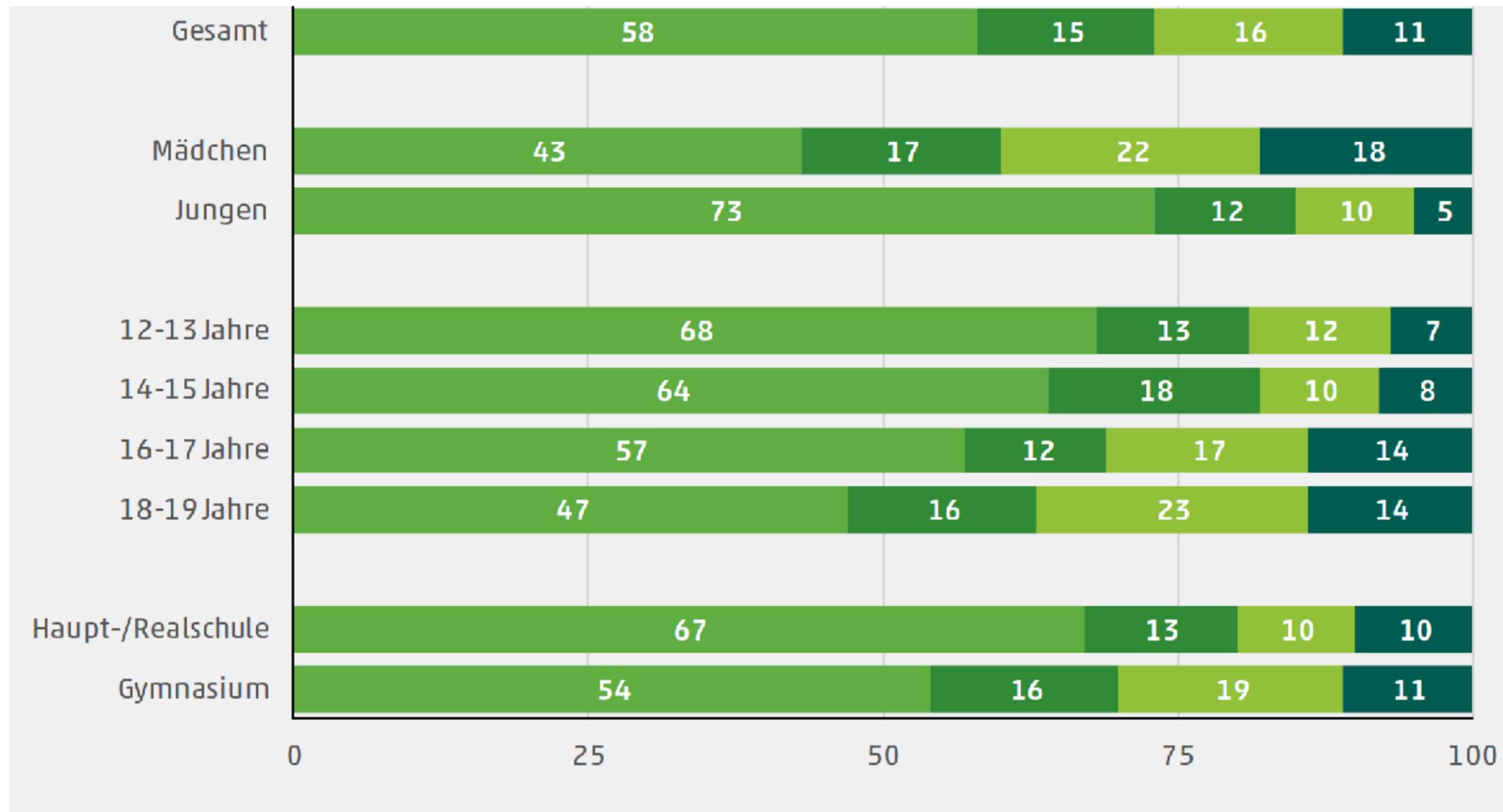
## FRAGE 2

Wer spielt mehr täglich? Jungs oder Mädchen?



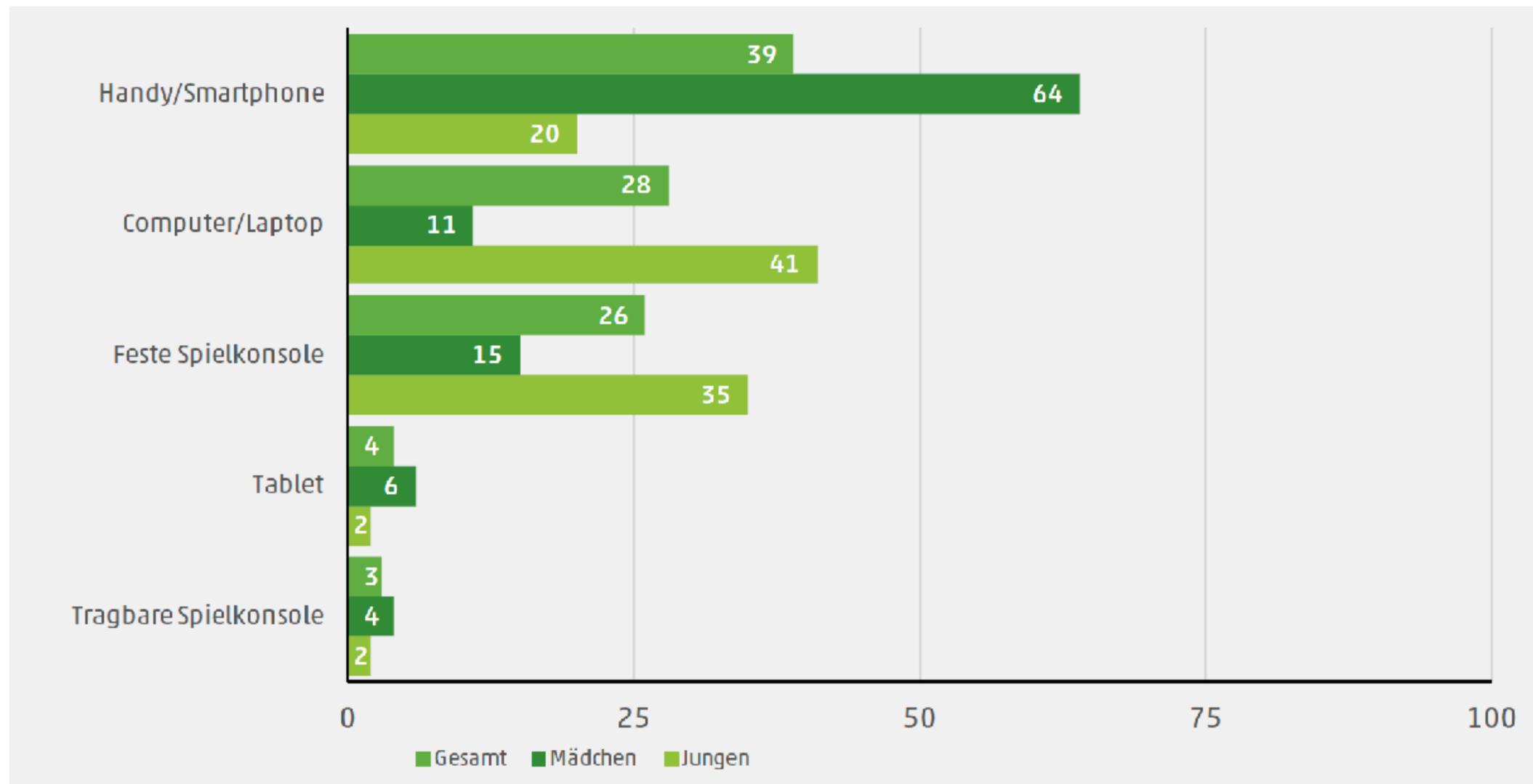
## FRAGE 3

Wer spielt mehr täglich? Haupt-/Realschüler oder Gymnasiasten?



## FRAGE 4

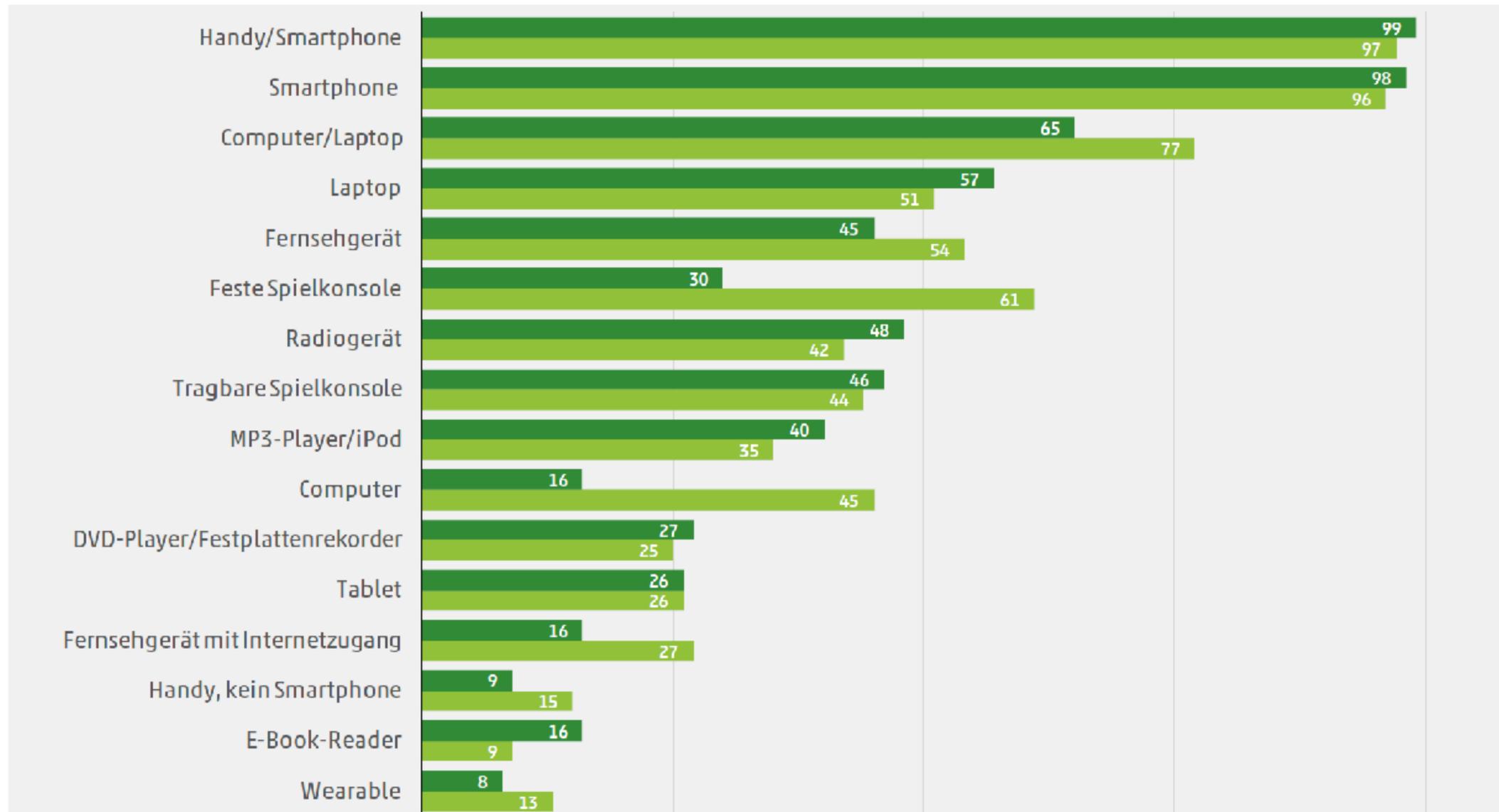
### Wie viel am Tag wird gespielt?



Quelle: JIM 2018, Angaben in Prozent, Basis: Nutzer von Computer-, Konsolen-, Tablet- und Handyspielen, n=1.069

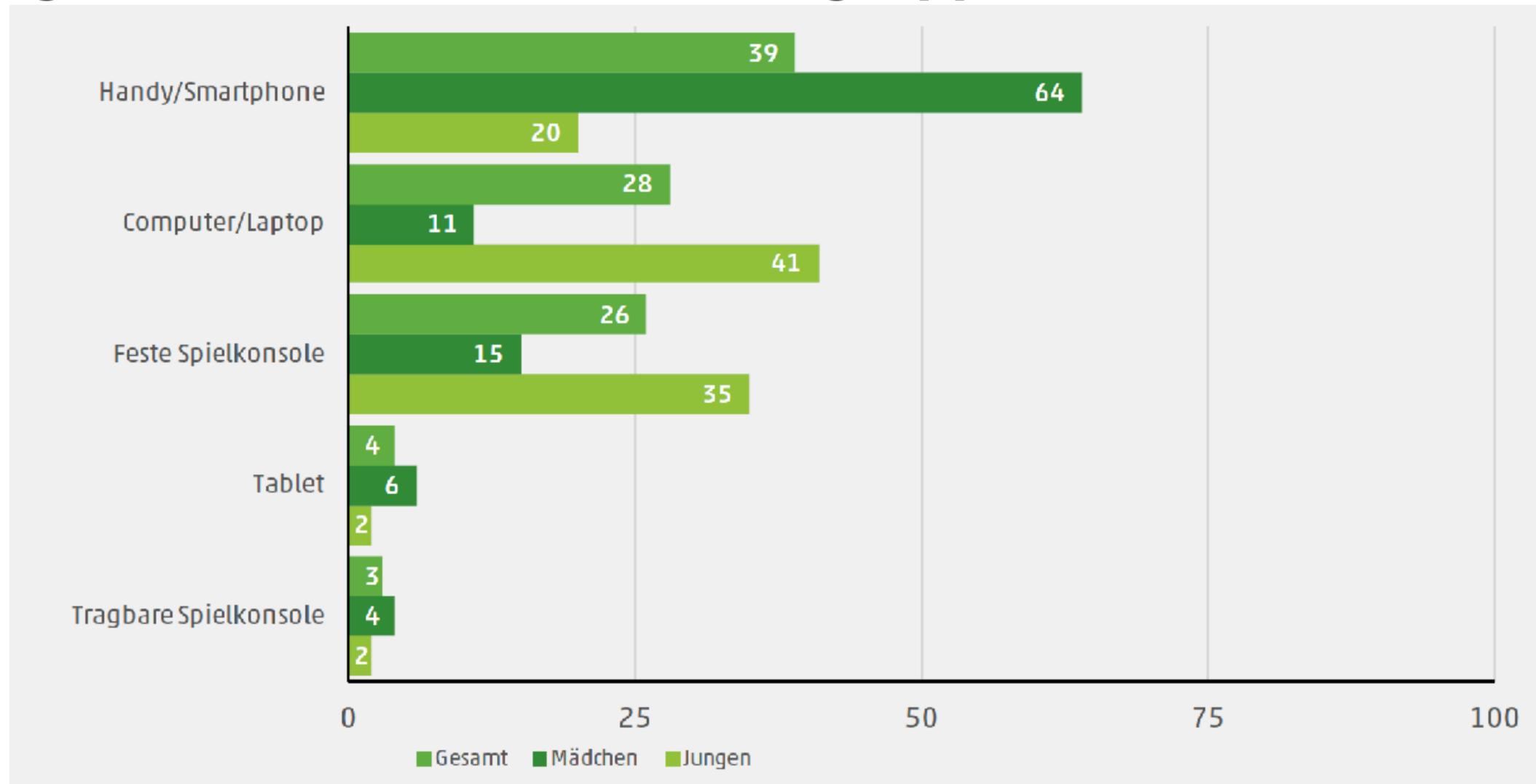
## FRAGE 5

Welches ist das am häufigsten besessene Gerät bei Jungs und Mädchen?



## FRAGE 6

Was ist das am häufigsten genutzte Gerät zum Spielen für Jungs und Mädchen in der Altersgruppe 12-19 Jahren?



Quelle: JIM 2018, Angaben in Prozent, Basis: Nutzer von Computer-, Konsolen-, Tablet- und Handyspielen, n=1.069

# FRAGE 7

## Was sind die beliebtesten Computer-, Konsolen-, Tablet- und Handyspiele?

	12-13 Jahre	14-15 Jahre	16-17 Jahre	18-19 Jahre
<b>Rang 1</b>	„Fortnite“ 27%	„Fortnite“ 28%	„Fortnite“ 16%	„FIFA“ 17%
<b>Rang 2</b>	„Minecraft“ 17%	„FIFA“ 14%	„Grand Theft Auto“ 14%	„Grand Theft Auto“ 12%
<b>Rang 3</b>	„FIFA“ 11%	„Minecraft“ 12%	„FIFA“ 10%	„Call of Duty“ 11% „League of Legends“ 11%

	Haupt-/Realschule	Gymnasium
<b>Rang 1</b>	„Fortnite“ 27%	„Fortnite“ 14%
<b>Rang 2</b>	„FIFA“ 15% „Grand Theft Auto“ 15%	„FIFA“ 12%
<b>Rang 3</b>	„Call of Duty“ 13%	„Minecraft“ 10%

Quelle: JIM 2018, Angaben in Prozent, Basis: alle Befragten, n=1.200

## Worum geht es genau?

### Psychologie



Conrod et al., 2000; Zuckermann, 1994

- **Impulsive**
  - schlecht im Planen und in der Verhaltenskontrolle, wenn im Stress;
  - Schwierigkeiten in Verhaltensinhibition, wenn es kurzfristig positive, aber mittel- oder langfristig negative Konsequenzen gibt
- **Sensation Seeker**
  - Neigung zu neuen, unterschiedlichen, komplexen, intensiven Eindrücken
  - sind bereit höhere Risiken einzugehen

# Worum geht es genau?

## Psychologie

- **Externalisierende Persönlichkeitsstile**
  - stehen in Verbindung zu substanzbezogenen Problemen & Störungen und gesundheitsbezogenem Risikoverhalten
  - haben bestimmte Konsummotive und Problembereiche (Informationsverarbeitung)
- **Zielgruppe**
  - 13-16jährige Jugendliche, die besonders hoch im SURPS scoren

Journal of Consulting and Clinical Psychology  
2011, Vol. 79, No. 3, 296–306

© 2011 American Psychological Association  
0022-006X/11/\$12.00 DOI: 10.1037/a0022997

### Long-Term Effects of a Personality-Targeted Intervention to Reduce Alcohol Use in Adolescents

Patricia J. Conrod  
King's College London and Université de Montréal,  
CHU-Hôpital Ste-Justine

Natalie Castellanos-Ryan  
Université de Montréal, CHU-Hôpital Ste-Justine

Clare Mackie  
King's College London

**Objective:** To examine the long-term effects of a personality-targeted intervention on drinking quantity and frequency (QF), problem drinking, and personality-specific motivations for alcohol use in early adolescence. **Method:** A randomized control trial was carried out with 364 adolescents (median age 14) recruited from 13 secondary schools with elevated scores in Hopelessness, Anxiety-Sensitivity (AS), Impulsivity, and Sensation-Seeking. Participants were randomly assigned to a control no-intervention condition or a 2-session group coping skills intervention targeting 1 of 4 personality risk factors. The effects of the intervention on quantity/frequency (QF) of alcohol use, frequency of binge drinking, problem drinking, and motives were examined at 6, 12, 18, and 24 months postintervention. **Results:** Intent-to-treat repeated measures analyses revealed a significant overall intervention effect in reducing problem drinking symptoms, and a Time  $\times$  Intervention effect on drinking QF and binge drinking frequency. Relative to the control group, the intervention group showed significantly reduced drinking and binge drinking levels at 6 months postintervention and reduced problem drinking symptoms for the full 24-month follow-up period (Cohen's  $d = 0.33$ ). A significant Time  $\times$  Intervention  $\times$  Personality interaction was demonstrated for coping and enhancement drinking motives. In addition to an overall effect of intervention on coping motives, the AS group who received that intervention reported fewer coping motives compared with the AS control group at 12 and 24 months postintervention. **Conclusions:** This study provides further evidence showing that personality-targeted interventions reduce drinking behavior in adolescents in the short term. Novel findings were that the interventions were shown to produced long-term effects on drinking problems and personality-specific effects on drinking motives.

**Keywords:** prevention, alcohol misuse, adolescence, personality, motives

Caspi, Begg, Dickson, Nigell, & Langley, 1995; Conrod, Castellanos-Ryan & Mackie (2011); Sher, Bartholow, & Wood, 2000

## Worum geht es genau?

### Psychologie - Interventionsaufbau



## Worum geht es genau?

### Gaming



## Worum geht es genau

### Gaming – Wirksamkeit von Serious Games



- **Positiv**
  - Therapieadhärenz, Motivation für Behandlungen, Wissensvermittlung, Symptomverbesserungen
- **Meta-analyse**
  - besser als Wartekontrollen
- **Entwicklungspotenzial**
  - aller meistens Wissenseffekte
  - Studienqualität
  - wenig Langzeitstudien
  - wenig zu Suchtprävention bei Jugendlichen
  - zumeist universalpräventiv

Baranowski et al. 2011; DeSmet et al., 2014; Lau, Smit, Fleming & Riper, 2017

## Worum geht es genau

### Gaming – Serious Games vs. Commercial Entertainment Games



- Finanzielle & technische Aspekte
- Vernachlässigung von User Experience
- Problemimmanent: Trade-off zwischen Entertainment & Lernen

Finde den "Sweet spot"!

<https://images.app.goo.gl/H8RWvL9sBYYQ5f4f6>

## Worum geht es genau

### Gaming – „Chocolate Broccoli Problem“



- Neuheitseffekt lässt nach
- Entertainment als “Köder” oder “Belohnung” für langweilige Aufgaben
- Zu viel Instruktion/Vorgaben/Wiederholung
- Boendermaker et al., (2016): Motivation nahm ab in der Spielebedingung!

<https://images.app.goo.gl/na3hAZHEQy8eYDfh9>

## Worum geht es genau

### Gaming – Stealth Learning

- zu vermittelnde Lerninhalte werden “en passant” vermittelt
- Spielspaß steht im Vordergrund
- Lernzweck nicht unmittelbar ersichtlich
- On-Off-Messaging, Genre, Labeling



# Wie sind wir dahin gekommen?

## Prototypenentwicklung

# CREATIVE PROCESS SOLVE

## A FIRST INSIGHT

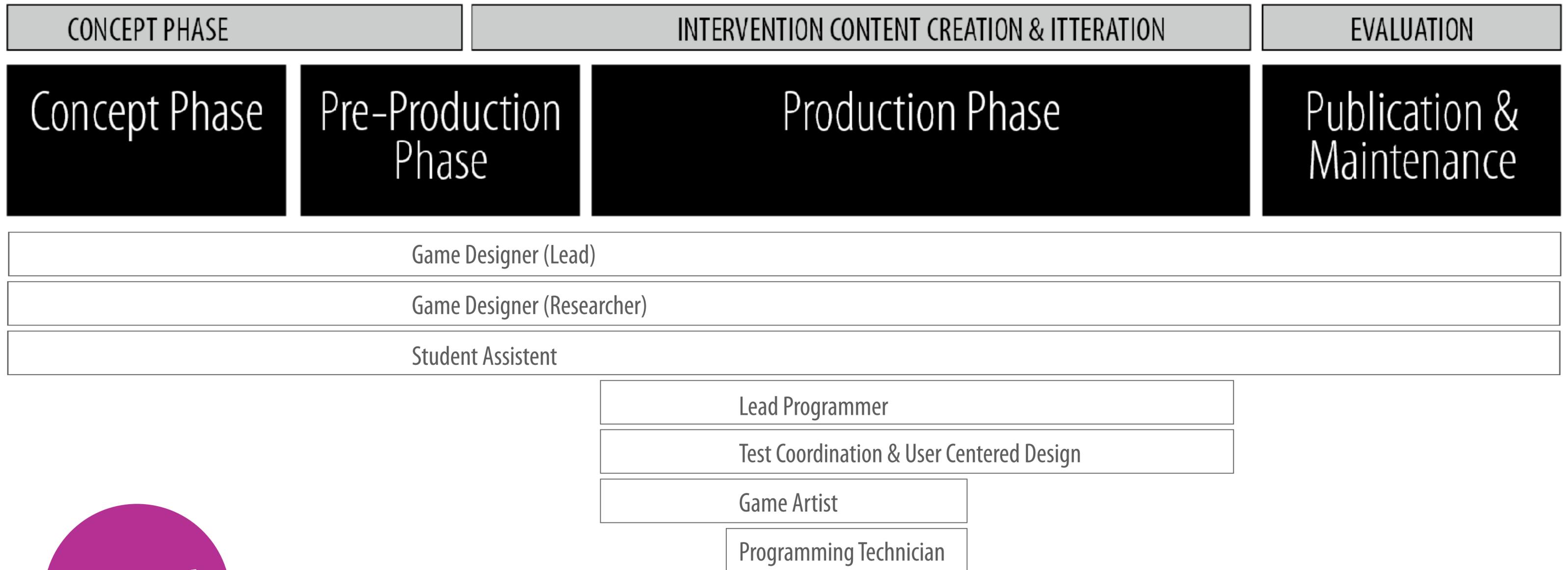
SOLVE | Workshop  
Carmen Johann

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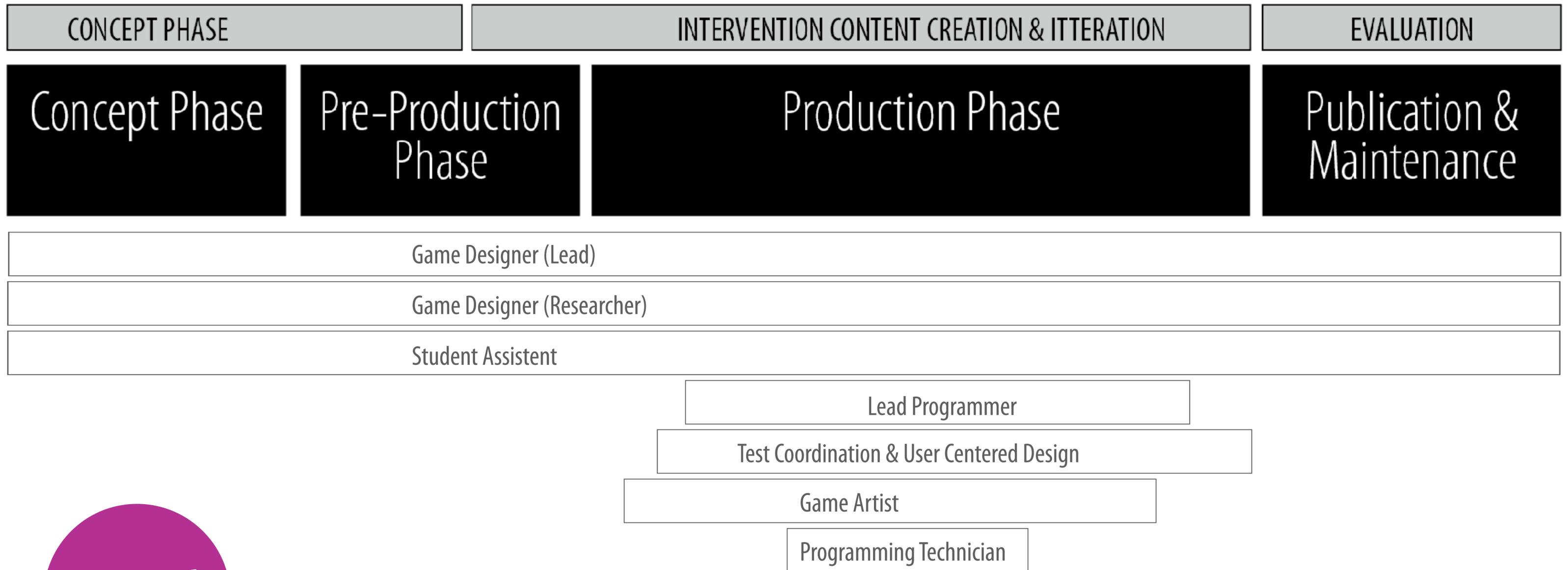
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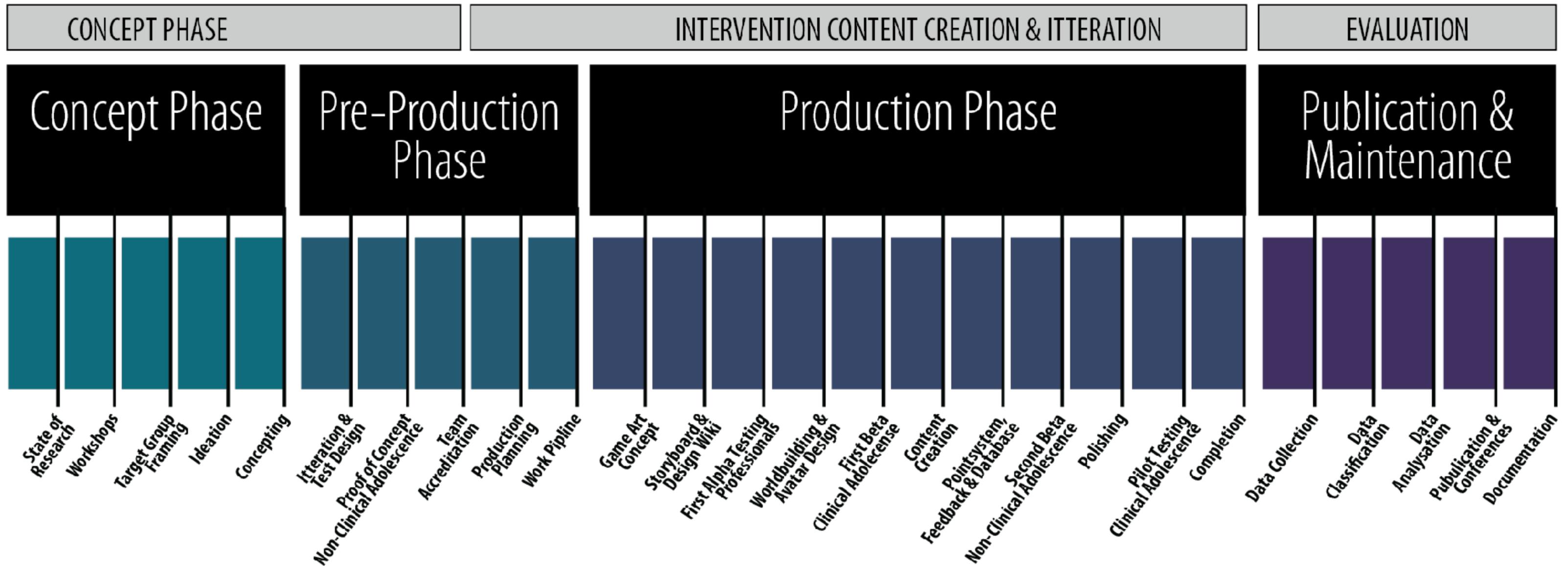
# CREATIVE PROCESS SOLVE



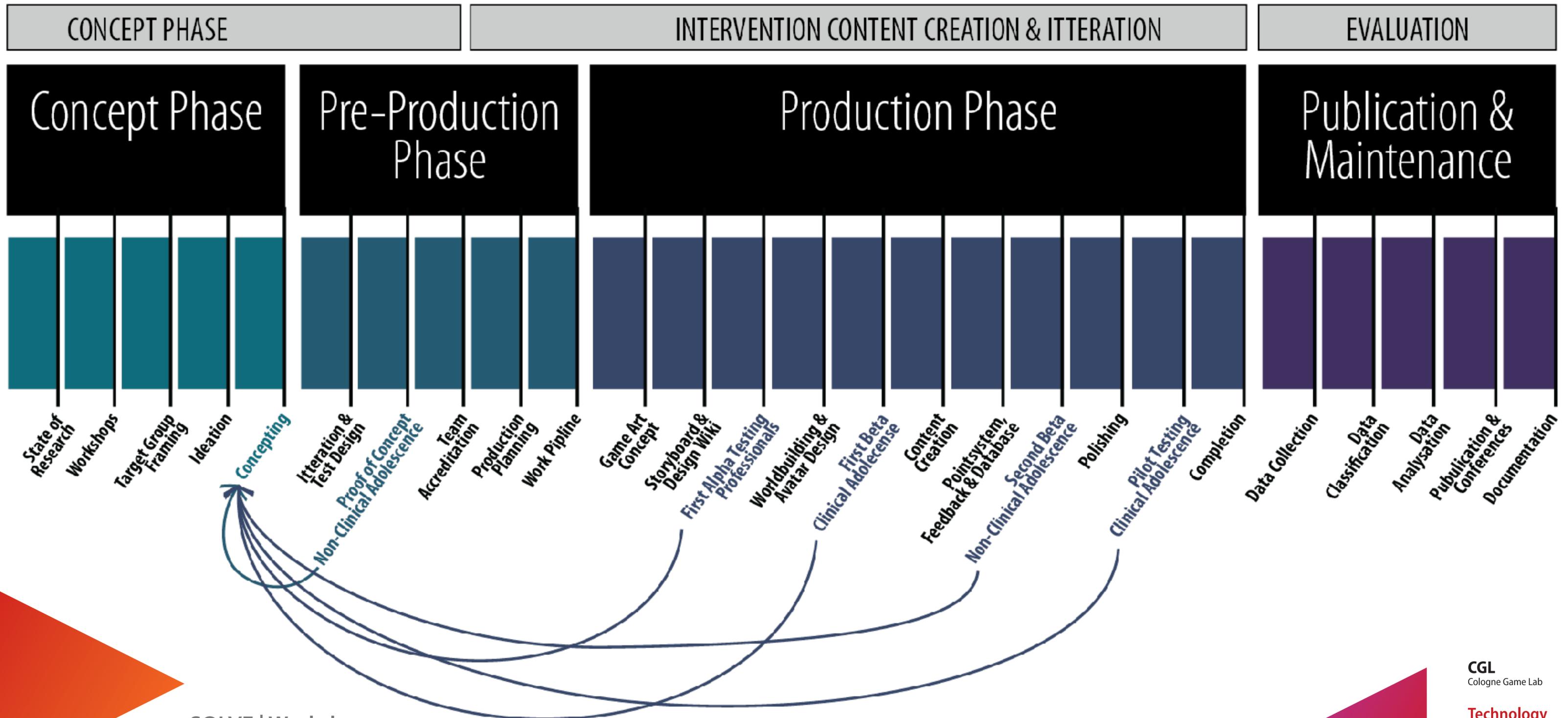
# CREATIVE PROCESS SOLVE



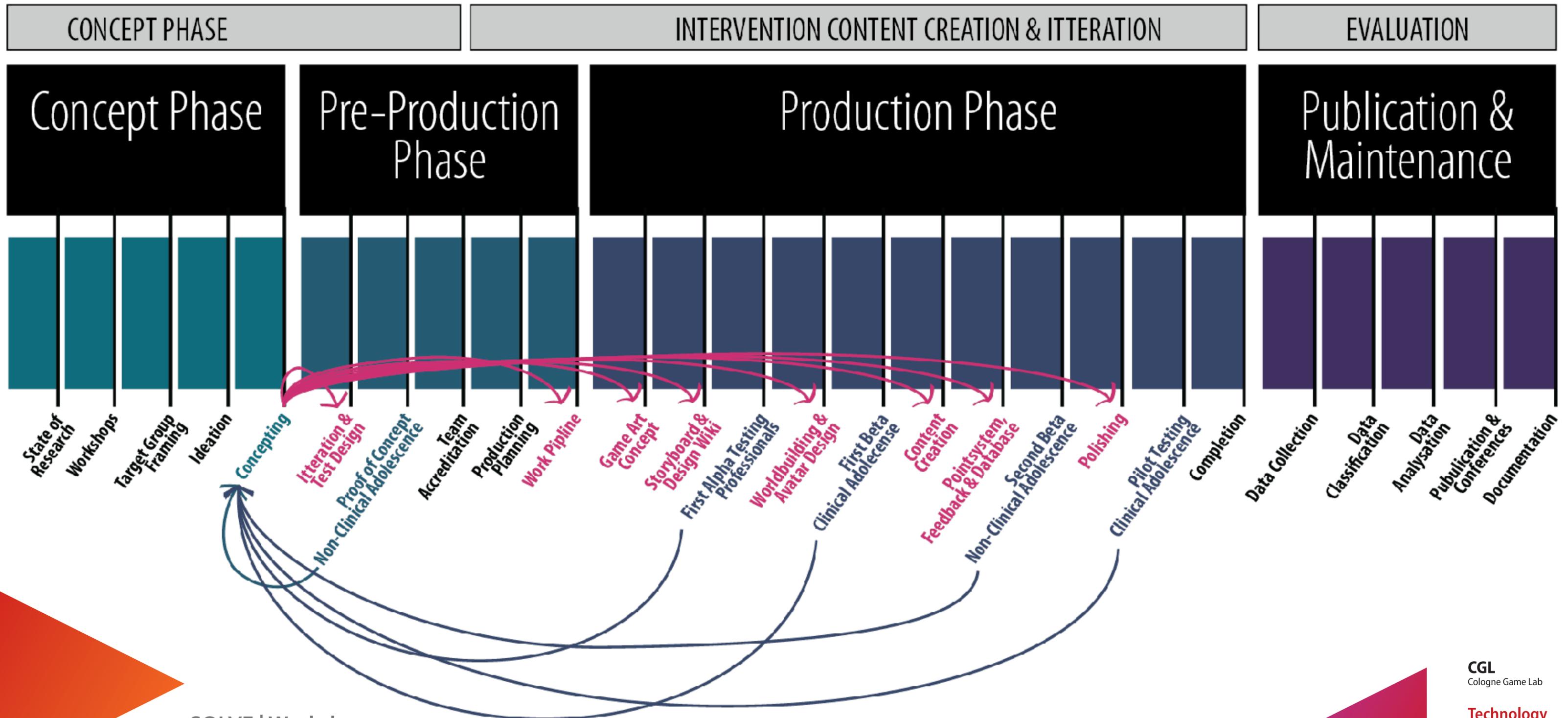
# CREATIVE PROCESS SOLVE



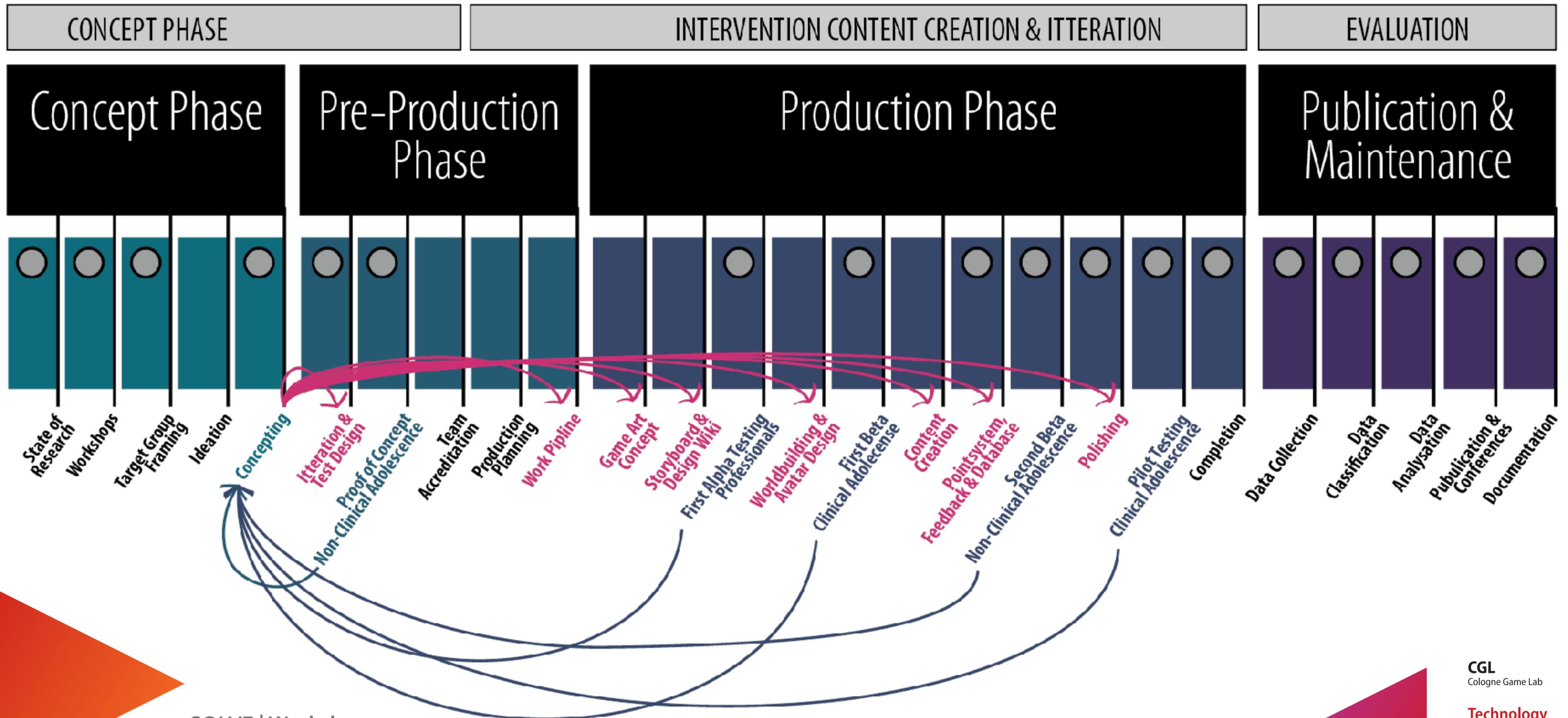
# CREATIVE PROCESS SOLVE



# CREATIVE PROCESS SOLVE



# CREATIVE PROCESS SOLVE



# CREATIVE PROCESS SOLVE

## State of Research

- Latest Publications
- Existing Games & Concepts
- Latest Workflow & Pipeline outcomes

## Workshops

- Psychologists teach Game Designers
- Game Designers teach Psychologists
- Input from Professionals (Context of Intervention)

## Target Group Framing

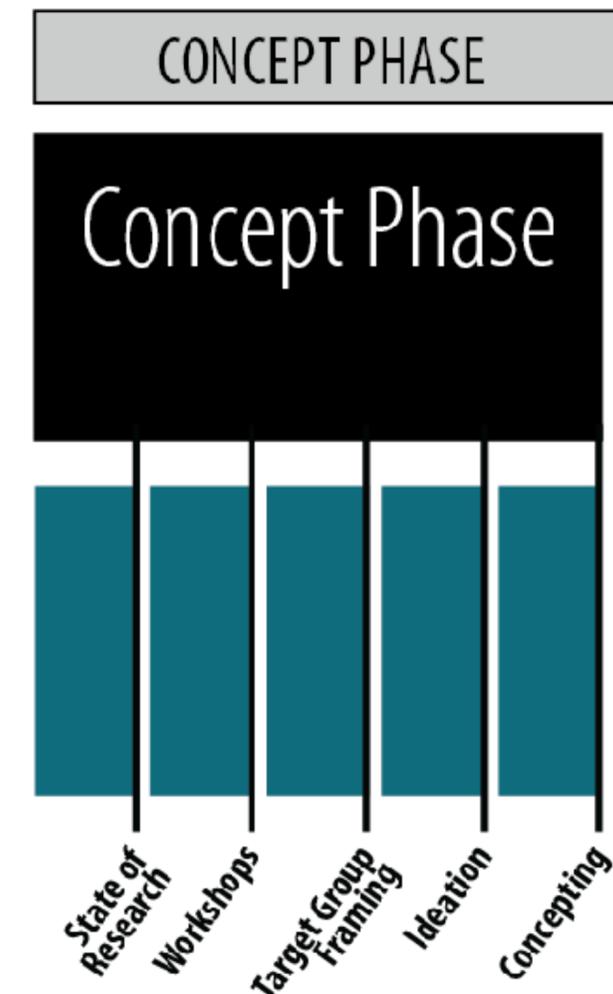
- Who is our target groups?
- What are their needs?
- What do we have to be careful about?

## Ideation

- First ideas of what the game could be capable of
- How it needs to attract the target group?
- Open Ideation without constraints to budget or any other typical boundaries!

## Concepting

- Sorting out the ideation concepts
- Focusing on maximum 2 of the 25 ideation concepts and going into detail.
- Description of game mechanic and intervention integration



# CREATIVE PROCESS SOLVE

## Iteration & Test Design

- Design of Focus Groups, Heuristics & User Testings
- Design of Iteration Integration

## Proof of Concept

- Focus Group with non-clinical adolescent
- Is the Genre a good fit?
- What kind of style do they prefer? ... etc.

## Team Accreditation

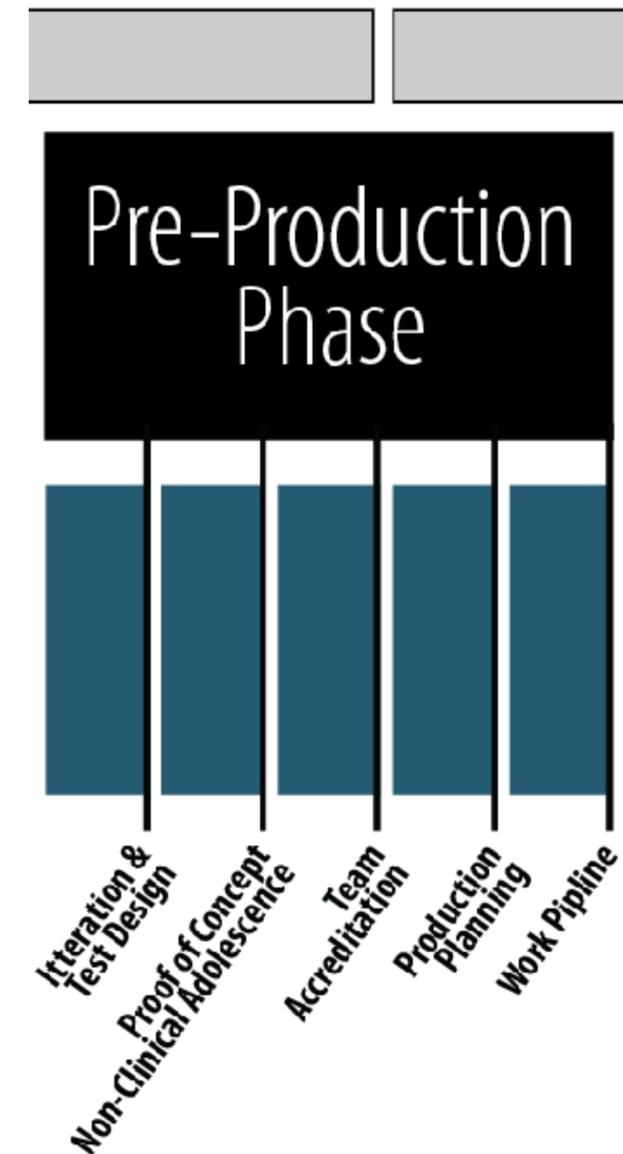
- Hire Programmers
- Hire Scientific Assistance
- Hire Artist

## Production Planning

- Prepare Design Document so team can directly start
- Prepare, Wireframes, Click Diagramms, Diagramms of Point-system

## Work Pipeline

- Prepare Tickets & Sprints
- Platform to save data
- Data Protection, Ethic Application
- Online Platforms for Digital Work (Trello, Slack, Google Calendar etc.)
- Office, Computers & Software for Team



# CREATIVE PROCESS SOLVE

## Game Art Concept

- Level Art Style
- UI Style
- Avatar Style etc.

## Storyboard & Design Wiki

- Sketch out a Storyboard of a players journey to brief team
- Bring Design Document to flexible Platform (Wiki)

## First Alpha Testing

- First Playable Prototype to test
- Not enough content for adolescence
- Inout about Game Feel, Character Controller Input, Game Art

## World-building & Avatar Design

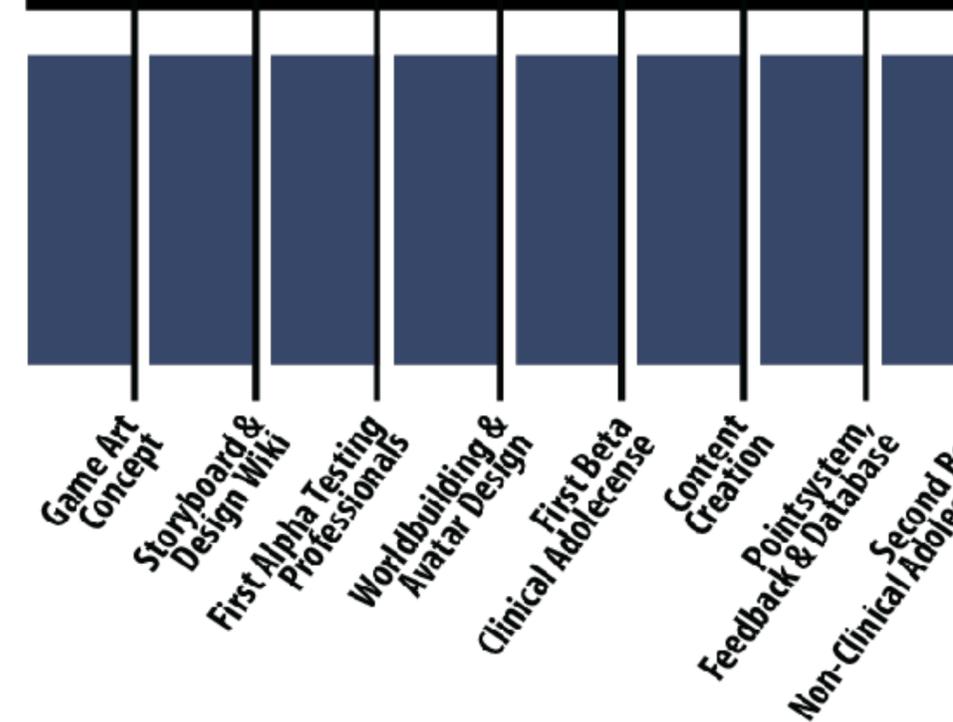
- First Level Design with simple Obstacles
- 1 Avatar modelling, rigging, animating different variations
- Collectables and Collision Feedback
- Intervention Component

## First Beta

- Single Interviews
- Heuristic Analysis UX/UI, Game Play, Game Feel, Leisure activities, sound, pointsystem
- Video Recording of interviews & play session
- Questionnaires

## INTERVENTION CONTENT CREATION &

## Production Phases



# CREATIVE PROCESS SOLVE

## Content Creation

- Creating all needed Assets to fill the game and create variety
- Collectables, Icons, Obstacles, Menus, Environment, Music, Sounds, VFX, Settings

## Pointsystem, Feedback & Database

- For data collection purpose a system must be integrated and connected to the factors looked at
- Feedback & Pointsystem must be in sink, so players can learn how the system works and what they can get out of it.
- Add menu were Professionals can sort the content of the game

## Polishing

- Add Game Feel and "Juiciness" to the game
- Screen shake on collision, particle effects, animation of object and UI elements
- Give the player the feeling that everything reacts to his actions

## Pilot Testing

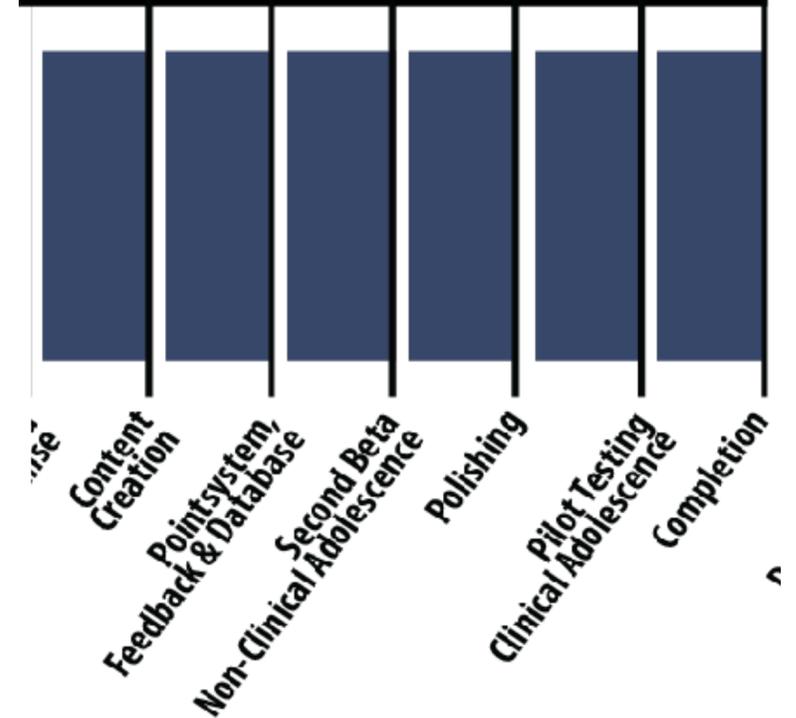
- Test the game within the intervention setting

## Completion

- Last bug fixing and polish
- Create working builds for different purposes (Hardware, Adolescence, Professionals)
- Create Material for presentations, advertisement etc. (Screenshot, let's plays, Game Evolution, Logo etc.)

## CONTENT CREATION & ITERATION

### Production Phase



# CREATIVE PROCESS SOLVE

## Data Collection

- Video & Audio-recordings
- Data from questionnaires and other tests
- Interviews
- Data from game collected

## Data Classification

- Sort data into needed classes according to study design

## Data Analysis

- Analyse with tool identified for your study
- Make sure to save the data on 3 different places (Lokal computer, Cloud, Workplace server)
- Stay to data protection and protect anonymity of tester

## Publication & Conferences

- Make sure your content is understandable for an interdisciplinary crowd
- Create visuals rather than overloaded text sheets when visiting conferences

## Documentation

- Latest Project files (Game Art, Game Programming, Game Design, Sound Design production)
- Game Design & Production Document
- Study Relevant Data (Recordings etc in Password Protected folder)
- User Manual for open source use

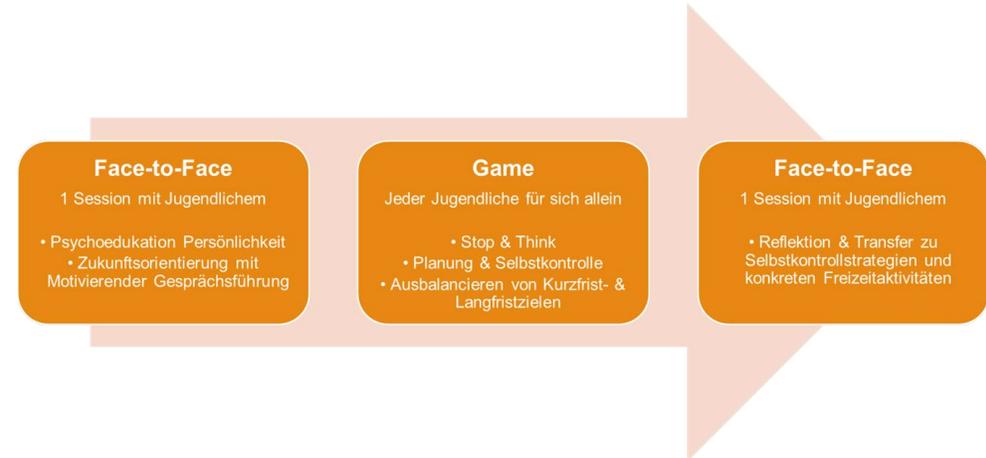


## Was steht an?

### Pilotierung



- Ab August 2021
- N=10-12



## Was steht an?

### Feldphase



- Ab Dezember 2021
- N=80
- Inkl. Katamnesetermine



## Was steht an?

### Wir suchen Praxispartner:

- Jugendhilfe, Suchtprävention, Suchtberatung, offene Kinder- und Jugendarbeit, Kinder-/Jugendpsychiatrie
- für Pilottestung (ab August 2021) u./o. Feldstudie (ab Dez. 2021)

### Zielgruppe:

- 13- bis 16-jährige impulsive u./o. sensation seeking Jugendliche (externalisierende Persönlichkeiten)



### Wir bieten:

- Teilnahme an einem innovativen Serious Game Projekt
- Flyer/Poster, telefonische Ansprechpartner für Eltern/Jugendliche
- Wertgutscheine für Studienteilnehmende
- Projektvorstellungen/Workshops mit Jugendlichen/Eltern/Fachkräften
- durch Ethikkommission und Datenschutzbeauftragte geprüftes Studienkonzept



## Referenzen

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# katho

Katholische Hochschule **Nordrhein-Westfalen**  
Catholic University of Applied Sciences

## Herzlichen Dank für Ihre Aufmerksamkeit

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