

Mobile Game Design Guide for the Middle-Aged and Older Adult Population

- PE: Positive Experience
- NE: Negative Experience
- DG: Design Guide

1. Cognitive and physical elements

Audiovisuals	
● PE1	Stress relieved with special effect (eg, objects cleared at once)
● PE2	Adequate size of text and objects
● PE3	Satisfied with design (eg, bright atmosphere, various colors, detail)
● PE4	Satisfied with sound (eg, harmony with visuals, comfortable)
● NE1	Difficult to recognize important objects (eg, confused with similar colors)
● NE2	Too small size of texts and objects
● NE3	Dissatisfied with design (eg, too simple, cliché, not familiar)
● NE4	Dissatisfied with sound (eg, too loud, constant repeat)
● DG1	Design important object/ character as distinguishable from others
● DG2	Provide voice dubbing when presenting stories or speech bubble
● DG3	Provide options to choose the size of the font and objects
● DG4	Avoid sounds that are too sharp or repetitive

Motor skills	
● PE8	Felt thrill, excitement after success of agility/ timing challenges
● PE9	Adequate speed of screen switch or character moving
● NE21	Too difficult levels of agility and timing
● NE22	Too fast or slow speed of screen switching or motion of characters
● NE23	Physical fatigue when playing games for a long time
● NE24	Non-preference for games that require agility
● DG15	Provide practice session for beginners
● DG16	Provide hints for control timing when the player fails repeatedly
● DG17	Increase the process speed and difficulty incrementally
● DG18	Provide speed adjustment function

Interface	
● PE5	Easy to find button
● PE6	Adequate information on one screen
● PE7	Visually well-expressed buttons for functions
● NE5	Need multiple button controls for moving and interacting
● NE6	Not enough tutorial for button functions
● NE7	Excessive information on one screen
● NE8	Unable to read a story (eg, story presented during actions)
● NE9	Tough to find button position (eg, located in the corners)
● NE10	Unable to find locations of self/opponent characters
● NE11	If touches are available over whole screen – Not sure where to touch
● NE12	Difficult to realize one's turn in a turn-based game
● NE13	Repeated touch slides with fingers rubbing
● NE14	Sliding in the wrong direction or at the wrong time
● NE15	Pressing buttons too hard during action games when tensed up
● NE16	Difficulty with connecting objects by sliding interaction
● NE17	Difficulty with using direction aiming lines (eg, attempts to slide along a line)
● NE18	Attempting taps when sliding is required
● NE19	Difficulty with double click (tap) interactions
● NE20	Touch errors (eg, touch with wrist)
● DG5	Present functions step-by-step rather than presenting excessive information in one screen
● DG6	Visually express functions of buttons for illiterate Players
● DG7	Avoid multiple button control at the same time unless they are essential to game play
● DG8	Provide user manual that explains control and functions of buttons
● DG9	Place important buttons in easy to find and touch locations
● DG10	Provide a mini-map
● DG11	Highlight touch area rather than suggesting to touch anywhere
● DG12	Provide a tutorial in case of repeated incorrect touch interactions
● DG13	Automatically confirm the termination of sliding actions after a specific time period
● DG14	Limit the area of operating touchpad on the screen

2. Psychological and socioemotional elements

Game rules

- PE10 Clear goals, easy and simple rules
- PE11 Interesting functions (eg, combo, revival, hiding, collecting)
- PE12 Hints provided at the right time
- PE13 Relaxed with no time limit
- PE14 Limit chances to play because it prevents game addiction
- PE15 Providing various modes and options
- PE16 Auto-play mode
- PE17 Nostalgia for similar games in the past
- PE18 Online version of traditional games
- NE25 Forgetting gaming methods
- NE26 Difficult to understand the use of resource/items (eg, wasting important resources)
- NE27 Difficult rules with a lack of explanation
- NE28 Unstable level of difficulties (too hard or too easy)
- NE29 Difficult to accept new type of games (having a stereotype about games)
- NE30 Unsatisfied rules
- NE31 Became nervous and stressed because of the time limit
- NE32 Regret due to excessive gameplay
- NE33 Difficult to understand foreign languages related to game guidance
- DG19 Provide a guidance, tutorial, and practice sessions
- DG20 Provide options for selecting difficulty levels
- DG21 Provide hints when the player fails repeatedly or is taking too much time
- DG22 Provide game rules and tips during loading time (repetitive tutorials)
- DG23 Provide a notification message if players abuse resources early in the game
- DG24 Provide an appropriate challenge rather than an extremely simple or easy rule
- DG25 Eliminate time limits or provide alternatives for level-passing
- DG26 Provide time management options

Affective aspect and perceived benefit

- PE22 Cognitive skill training
- PE23 Sense of achievement
- PE24 Strategic thinking
- PE25 Concentration
- PE26 Feelings of fun and flow
- PE27 Learning something new
- PE28 Killing time and relieving stress
- PE29 Connecting stories to real life experiences and finding meaning
- PE30 Reminiscing
- DG31 Inform players of affective aspects and beneficial effects of the game (cognitive training, strategic thinking, learning, connecting real life, reminiscing, etc.)

Story and character

- PE19 Satisfied with stories (eg, touching, curious, exciting)
- PE20 Likable character (eg, familiar look, attractive personality)
- PE21 Satisfied when the player is praised by game characters
- NE34 Unable to understand the meaning of the story (eg, lack of explanation, wrong translation)
- NE35 Dissatisfied with the story (eg, too simple, cliché, depressed, lack of empathy)
- NE36 Dislike characters (eg, childish, unlikable personality)
- NE37 Dislike the violent elements
- DG27 Provide familiar languages and concepts to the player (eg, based on culture and age)
- DG28 Provide players with complimentary messages or motivational feedback
- DG29 Do not indicate life of older adults in static, passive, negative, and depressed tones
- DG30 Provide options for players to choose stories and reflect diversity

Social aspect

- PE31 More enjoyable when playing games together
- PE32 Side-by-side help from supporters
- PE33 Mission accomplished with help or cooperation from other players
- PE34 Satisfied with no chatting function because no profanity/slang from other players
- NE38 Difficult to understand how to invite friends
- NE39 Afraid of being a burden to other players
- NE40 Wanting to play with children, but finding it difficult because of a generation gap in preference and game skills
- NE41 Afraid of bothering other people (eg, exposing excessive gaming action, not willing to connect to SNS)
- DG32 Consider using multiplayer mode or co-playing context in single play mode
- DG33 Remove chat features in competitive games or only allow consensual chat between players.
- DG34 Restrict the use of abusive language

3. Consumption contextual elements

Devices

- PE35 Satisfied with screen size of the tablet PC, which is bigger than cellphone
- PE36 Satisfied with using assisting tools (eg, touch pen, controller etc.)
- NE42 Touch failure (eg, not enough moisture on the finger)
- NE43 Dissatisfied with small screen with cellphone
- NE44 Inconvenience with assisting tools
- NE45 Device failed to recognize when entering foreign language
- DG35 Able to play both in a tablet PC and mobile phone
- DG36 Provide supportive equipment (eg, touch pen, joystick etc.)

Installation and setting to start

- NE46 Long installation time/Heavy data usage
- NE47 Difficulty with linking to SNS accounts
- NE48 Difficulty using Appstore (eg, search and download)
- NE49 Not familiar with utilizing various applications
- NE50 Difficulty with typing with the keyboard
- DG37 Inform expected install time and file sizes
- DG38 Load account information automatically with privacy precautions
- DG39 Use easy and unique game titles, which do not overlap with other games

Advertising and payment

- PE37 Items provided after watching ads
- PE38 Ads providing new information and giving a short break
- NE51 Too many and too long ads
- NE52 Difficult to turn off the ads (very small clickable "close" button, countdown, etc.)
- NE53 Ads with inappropriate content (eg, adult content)
- NE54 Being forced to watch ads
- NE55 Inducing payments to pass at the difficult game level (Presenting phrases that induces payment excessively)
- NE56 Not comfortable with interactive ads because it creates confusion between the ads and the game
- NE57 Difficult to understand complex cash payment system
- NE58 Afraid of being mischarged
- DG40 Provide items and hints after viewing ads
- DG41 Avoid excessive or long ads, which interrupt gaming
- DG42 Make it easy to turn off the ads
- DG43 Present suitable ads for ages and preference (avoid inappropriate content)
- DG44 Let the player choose the timing for advertisements (avoid sudden ads that interrupt the game flow)
- DG45 Non-interactive ads are preferred over interactive ads