

EPUX metric for 2D-screen games

The maximum possible score when applying this metric is 100 points: 60 for playability emotions and 40 for User Experience (UX). All these sensations score 20 points, 10 for each related MDA layer and its features that may or may not be identified in the game that is evaluated. The evaluator must choose between three ranges of scores for each characteristic. Insufficient usage of these aspects yields 0 to 3 points, acceptable inclusion ranges between 4 to 6 and, finally, a good design layer can be scored between 7 and 10. Each UX element counts for 8 points, equally divided between the short-term and the long-term features. Likewise, each aspect is valued over three ranges. A bad User Experience obtains 0 or 1 point, an acceptable adaption for the player scores 2 or 3 points and a good UX implementation scores 4.

Playability emotion	MDA layer	Features	Evaluation	Punctuation
Challenge	Mechanics	Levels, points, goals, quests.	These features barely appear during the game.	0-3/10
			These features appear related to the main actions during the game.	4-6/10
			These features frequently appear related to all actions during the game.	7-10/10
	Dynamics	Time and enemy patterns, opponent players.	These features barely appear during the game.	0-3/10
			The player is not easily engaged although these features appear during the game.	4-6/10
			The player is easily engaged when these features appear during the game.	7-10/10
Fantasy	Mechanics	Rewards, badges, virtual items, feedback.	These features barely appear during the game.	0-3/10
			These features appear related to the main actions during the game.	4-6/10
			These features frequently appear related to all actions during the game.	7-10/10
	Aesthetics	Audio and visual effects regarding love, beauty, delight, and surprise.	The player barely experiences the emotions that the aesthetic effects awaken.	0-3/10
			The player experiences the emotions that the aesthetic effects awaken in a moderate way.	4-6/10
			The player experiences the emotions that the aesthetic effects awaken in an intense way.	7-10/10
Curiosity	Dynamics	Reward scheduling, progressive unlock, and appointments.	These features barely appear during the game.	0-3/10
			The player is not easily engaged although these features appear during the game.	4-6/10

			The player is easily engaged when these features appear during the game.	7-10/10
	Aesthetics	Audio and visual effects regarding thrill, envy, connection, and comedy.	The player barely experiences the emotions that the aesthetic effects awaken.	0-3/10
			The player experiences the emotions that the aesthetic effects awaken in a moderate way.	4-6/10
			The player experiences the emotions that the aesthetic effects awaken in an intense way.	7-10/10
SUBTOTAL				/60
UX element	Term-time	Features	Evaluation	Punctuation
Motivation	Short-term	Initial attraction to play.	The player feels no initial attraction to play just watching the game.	0-1/4
			The player feels some initial attraction to play just watching the game.	2-3/4
			The player feels a strong initial attraction to play just watching the game.	4/4
	Long-term	Available rewards during the game.	There are few or no rewards to achieve during the game.	0-1/4
			There are some rewards to achieve during the game.	2-3/4
			There are a lot of rewards to achieve during the game.	4/4
Meaningful choices	Short-term	Player’s possible tactics.	There are few or no tactics to choose during the game.	0-1/4
			There are some tactics to choose during the game.	2-3/4
			There are a lot of tactics to choose during the game.	4/4
	Long-term	Player’s possible strategies.	There are few or no strategies to choose during the game.	0-1/4
			There are some strategies to choose during the game.	2-3/4
			There are a lot of strategies to choose during the game.	4/4
Usability	Short-term	Sense of control since the beginning.	The player feels lost using the interface when starting the game.	0-1/4
			The player has some control using the interface when starting the game.	2-3/4
			The player completely controls the interface when starting the game.	4/4
	Long-term	Possibility of mastering the interface.	There is almost no possibility of mastering the interface.	0-1/4
			There are some possibilities of mastering the interface.	2-3/4

			There are a lot of possibilities of mastering the interface.	4/4
Aesthetics	Short-term	Pleasant direct sensory experience.	The first aesthetic experience is barely pleasant.	0-1/4
			The first aesthetic experience is adequately pleasant.	2-3/4
			The first aesthetic experience is really pleasant.	4/4
	Long-term	Pleasant experience throughout the game.	The aesthetic experience is hardly pleasant throughout the game.	0-1/4
			The aesthetic experience is more or less pleasant throughout the game.	2-3/4
			The aesthetic experience is really pleasant throughout the game.	4/4
Balance	Short-term	Basic game interactions are quickly learnt.	The player learns basic interactions with some difficulty when starting the game.	0-1/4
			The player learns basic interactions adequately when starting the game.	2-3/4
			The player easily learns basic interactions when starting the game.	4/4
	Long-term	Player's progress affects the interface.	The progress of the player barely affects the interface.	0-1/4
			The progress of the player moderately affects the interface.	2-3/4
			The progress of the player greatly affects the interface.	4/4
SUBTOTAL				/40

EPUX metric for virtual reality games

The virtual reality metric also assigns 60 points to playability emotions and 40 to UX elements, with a maximum possible score of 100. Challenge is the only equally scored emotion, whereas the Fantasy and the Curiosity layers are split into two even parts. The first one scores 5 points for the same features as the 2D-screen games and the second one scores another 5 in the adaption to the VR environment. In any case, every section is scored in accordance with the three same ranges: an insufficient application scores 0 or 1 point, an acceptable inclusion scores 2 or 3, and a good design scores 4 to 5. The divisions and the ranges remain the same for UX, but some VR features have been added to consider when evaluating the game. Every VR metric difference is indicated in *italics*.

Playability emotion	MDA layer	VR Features	Evaluation	Punctuation
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Challenge	Mechanics	Levels, points, goals, quests.	These features barely appear during the game.	0-3/10
			These features appear related to the main actions during the game.	4-6/10
			These features frequently appear related to all actions during the game.	7-10/10
	Dynamics	Time and enemy patterns, opponent players.	These features barely appear during the game.	0-3/10
			The player is not easily engaged although these features appear during the game.	4-6/10
			The player is easily engaged when these features appear during the game.	7-10/10
Fantasy	Mechanics	Rewards, badges, virtual items, feedback.	These features barely appear during the game.	0-1/5
			These features appear related to the main actions during the game.	2-3/5
			These features frequently appear related to all actions during the game.	4-5/5
		<i>These are either interactive and integrated in the environment or otherwise.</i>	<i>These features are barely interactive in the environment.</i>	0-1/5
			<i>These features are moderately interactive in the environment.</i>	2-3/5
			<i>These features are highly interactive in the environment.</i>	4-5/5
	Aesthetics	Audio and visual effects regarding love, beauty, delight, and surprise.	The player barely experiences the emotions that the aesthetic effects awaken.	0-1/5
			The player experiences the emotions that the aesthetic effects awaken in a moderate way.	2-3/5
			The player experiences the emotions that the aesthetic effects awaken in an intense way.	4-5/5
		<i>The sense of surrounding intensifies the emotion.</i>	<i>The sense of surrounding barely affects these emotions.</i>	0-1/5
			<i>The sense of surrounding moderately affects these emotions.</i>	2-3/5
			<i>The sense of surrounding greatly affects these emotions.</i>	4-5/5
Curiosity	Dynamics	Reward scheduling, progressive unlock, and appointments.	These features barely appear during the game.	0-1/5
			The player is not easily engaged even though these features appear during the game.	2-3/5
			The player is easily engaged when these features appear during the game.	4-5/5
		<i>These are interactive and can be explored or otherwise.</i>	<i>These features are barely interactive and cannot be explored.</i>	0-1/5
			<i>These features are moderately interactive and can be explored.</i>	2-3/5

			<i>These features are highly interactive and can be explored.</i>	4-5/5
	Aesthetics	Audio and visual effects regarding thrill, envy, connection, and comedy.	The player barely experiences these emotions that the aesthetic effects awaken.	0-1/5
			The player experiences these emotions that the aesthetic effects awaken in a moderate way.	2-3/5
			The player experiences these emotions that the aesthetic effects awaken in an intense way.	4-5/5
		<i>The sense of interaction intensifies the emotion.</i>	<i>The sense of interaction barely affects these emotions.</i>	0-1/5
			<i>The sense of interaction moderately affects these emotions.</i>	2-3/5
			<i>The sense of interaction greatly affects these emotions.</i>	4-5/5
SUBTOTAL				/60
UX element	Term-time	Features	Evaluation	Punctuation
Motivation	Short-term	Initial attraction to play.	The player feels no initial attraction to play just watching the game.	0-1/4
			The player feels some initial attraction to play just watching the game.	2-3/4
			The player feels a great initial attraction to play just watching the game.	4/4
	Long-term	Available rewards during the game. <i>The device and controllers permit interaction.</i>	<i>There are few or no interactive rewards to achieve during the game</i>	0-1/4
			<i>There are some rewards to achieve during the game, a few are interactive.</i>	2-3/4
			<i>There are a lot of interactive rewards to achieve during the game.</i>	4/4
Meaningful choices	Short-term	Player’s possible tactics. <i>The device and controllers allow the interaction.</i>	<i>There are few or no interactive tactics to choose during the game.</i>	0-1/4
			<i>There are some tactics to choose during the game, a few are interactive.</i>	2-3/4
			<i>There are a lot of interactive tactics to choose during the game.</i>	4/4
	Long-term	Player’s possible strategies.	There are few or no strategies to choose during the game.	0-1/4
			There are some strategies to choose during the game.	2-3/4
			There are a lot of strategies to choose during the game.	4/4
Usability	Short-term	Sense of control since the beginning. <i>There are no complex actions necessary to play.</i>	The player feels lost using the VR interface when starting the game and cannot complete some actions.	0-1/4

			The player has some control using the VR interface when starting the game, having no problems with some actions.	2-3/4
			The player completely controls the interface when starting the game.	4/4
	Long-term	Possibility of mastering the interface. <i>No dizziness or headaches caused.</i>	There is barely no possibility of mastering the interface and/or playing for a long time causes dizziness or headaches.	0-1/4
			There are some possibilities of mastering the interface and playing for a long time causes no dizziness or headaches.	2-3/4
			There are a lot of possibilities of mastering the interface and playing for a long time causes no dizziness or headaches.	4/4
Aesthetics	Short-term	Pleasant direct sensory experience.	The first aesthetic experience is barely pleasant.	0-1/4
			The first aesthetic experience is more or less pleasant.	2-3/4
			The first aesthetic experience is really pleasant.	4/4
	Long-term	Pleasant experience throughout the game. <i>Budget limitations taken into account.</i>	The aesthetic experience is barely pleasant throughout the game, even considering budget limitations.	0-1/4
			The aesthetic experience is more or less pleasant throughout the game considering budget limitations.	2-3/4
			The aesthetic experience is really pleasant throughout the game.	4/4
Balance	Short-term	Basic game interactions are quickly learnt. <i>There is a tutorial.</i>	The player learns basic interactions when starting the game with some difficulty and/or there is no tutorial.	0-1/4
			The player more or less learns basic interactions when starting the game through a tutorial.	2-3/4
			The player easily learns basic interactions when starting the game through a tutorial.	4/4
	Long-term	Player's progress affects the interface.	The progress of the player barely affects the interface.	0-1/4
			The progress of the player moderately affects the interface.	2-3/4
			The progress of the player greatly affects the interface.	4/4

SUBTOTAL	/40
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