

# Identity-based Gamification Model of Museum Visitors

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## **ABSTRACT**

This paper presents a gamification model of museum visitors using an existing identity-based taxonomy of visitors, a player orientation meta-framework and a gamification elements model. The model proposes the visitor type as the key concept and the player orientation as an intrinsic and transversal set of characteristics. The paper proposes the model as the basis for a recommendation tool.

## **Keywords**

gamification, museum, culture, visitor, player orientations, recommendation tool

## **INTRODUCTION**

In any Gamification project it is necessary to understand users and their motivations. One way to do this is to use existing studies and models of users for a particular scenario.

Although traditionally studies of museum visitors have focused on defining demographic characteristics of visitors, the most current knowledge tells us that sociodemographic aspects do not provide much information about the motivations to visit or not (Prentice et al. 1997).

Falk (2009) argues that demographic characteristics, type of museum, time of year and group composition are not sufficient to understand and predict the behavior of museum visitors because these don't reflect their motivations, needs or interests. Falk explains that the experience of every visitor is the synthesis of individual motivations related to their identities and how they perceive the museum meets the needs and interests arising from these motivations. According to Falk, the museum visit is conditioned by three different contexts: personal, sociocultural and physical.

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## VISITOR TYPES

Falk (2009) provides a taxonomy of visitors called Visitor Identity-Related Motivation Typology, shown in table 1. This tool is very intuitive and easy to use to understand how museums assist or inhibit the visitor experience, and it has been adopted by many organizations as a method of segment visitors and predict their behavior.

Visitor categories	Motivations
Explorer	Curiosity driven with a generic interest in the site.
Facilitator	Those who are socially motivated and focus on enabling the experience and learning in others
Experience seeker	Those who see the site as an important destination and satisfaction derives from having 'been there and done that'
Professional/Hobbyist	Those who feel a close tie to the site in relation to their professional or hobbyist passion
Recharger	Those who are primarily seeking to have a contemplative, spiritual or restorative experience

**Table 1:** Falk's taxonomy

## PLAYER ORIENTATIONS

Acknowledging the act of playing as inherent to human culture (Huizinga 1955), it's possible to gamify Falk's taxonomy of visitors by adding transversal player categories as intrinsic characteristics of visitors.

There are many player taxonomies to choose from, and Hamari et al. (2014) performed a comprehensive analysis of scientific articles summarizing the common concepts of all classifications and generated a meta-synthesis of what characterizes the different types of players, as motivation or orientation, shown in table 2:

Player orientations	Concepts that define player types
Achievement	Achiever, single-oriented player, Guardian/achiever, Aggressive gamer, Achievement, Progress & provocation, Power & domination, Runner, Hard fun, Casual (Stewart), Avatar level, (Semi)-professional
Exploration	Explorer, Solver, Rational/Explorer, Aggressive gamer, Social gamer, Immersion, Exploration & fantasy, Story & escapism, curiosity
Sociability	Socializer, Social mentalities, Community-oriented player, Idealist/Socializer, Social, Helping & support, The people factor, Friends & collaboration, Semi-professional, Amateur
Domination	Killer, Artisan/Killer, Aggressive gamer, Off-real world oriented player, Progress & provocation, Power & domination, Casual (Stewart)

Immersion	Immersion, Committed mentalities, Exploration & fantasy, Story & escapism, Off-real worlds oriented player, altered states, Hardcore (Stewart)
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**Table 2:** Hamari et al. concept-centric listing of player typologies

## VISITOR-PLAYER MODEL

To stress the idea that visitors are the key concept and player orientations are transversal table 3 is constructed where guessed percentages have been added, showing that each visitor has a bit of each player orientation.

	Explorer	Facilitator	Exp. seeker	Prof./Hobbyist	Recharger
Achievement	5%	5%	50%	30%	5%
Exploration	55%	10%	10%	5%	15%
Sociability	15%	60%	10%	20%	10%
Domination	5%	5%	20%	40%	5%
Immersion	20%	20%	10%	5%	65%

**Table 3:** Visitor types and player orientations

More variables and modifiers can be added; for example the player orientations can be divided in different demographic variables like gender, age, etc. to depict (via  $\pm x\%$ ) the level of competitiveness, sociability, etc.

## GAMIFICATION ELEMENTS MODEL

Now that users are modeled as visitors-players, the model can be incorporated into Gamification designs using, i.e., the MDA model (Hunicke, LeBlanc, and Zubeck 2004) or similar. In it, from the designer perspective, each mechanic supports a number of dynamics and these create a number of Aesthetics. Each of these are more suited to one player orientation or another, so it's possible to characterize these elements by the player orientations we have designed, as shown in table 4.

Aesthetic	Dynamic	Mechanic
Achievement	Achievement	Achievement
Exploration	Exploration	Exploration
Sociability	Sociability	Sociability
Domination	Domination	Domination
Immersion	Immersion	Immersion

**Table 4:** MDA model characterized by player orientations

## DISCUSSION: RECOMMENDATION TOOL

The resulting Visitors-Players and Gamification Elements models might be developed into a recommendation tool to support Gamification design. It would take as input the

visitor-player model (table 3) and the museum visitors' distribution according to Falk's model (table 5, using example values) and it would give as output the player orientation distribution (table 6) and a ranking of the most suitable aesthetics, dynamics and mechanics to use (table 7).

Visitor categories distribution	
Explorer	20%
Facilitator	10%
Experience Seeker	40%
Professional/Hobbyist	5%
Recharger	25%

**Table 5:** Example values of visitor categories for a museum in accordance to Falk's model.

Player orientation distribution	
Achievement	24,25%
Exploration	20,00%
Sociability	16,50%
Domination	12,75%
Immersion	26,50%

**Table 6:** Player orientation values obtained as combination<sup>1</sup> of table 3 and table 5

Aesthetic		Dynamic		Mechanic	
Challenge	#Rank	To finish in time	#Rank	Leaderboard	#Rank
Achievement	35%	Achievement	Y%	Achievement	Z%
Exploration	0%	Exploration	Y%	Exploration	Z%
Sociability	20%	Sociability	Y%	Sociability	Z%
Domination	35%	Domination	Y%	Domination	Z%
Immersion	10%	Immersion	Y%	Immersion	Z%

**Table 7:** Resulting gamification elements where aesthetic values<sup>2</sup> (Xs) are set, Y values are a function of Xs, and Z values are a function of Ys. M/D/A Ranks are a function of Xs/Ys/Zs and player orientation distribution (table 6).

## ENDNOTES

<sup>1</sup> The combination takes table 3 and table 5 values as input matrices and calculates the product matrix table3\*table5.

<sup>2</sup> Aesthetic values are just guess examples and should be inferred/deducted by experience, experiments or other sources.

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