

User Goals, Behaviours and Attitudes: Developing Web User Personas of Art and Design Students

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How to cite this paper: Goh, C. H., & Romainoor, N. H. (2019). User Goals, Behaviours and Attitudes: Developing Web User Personas of Art and Design Students. *Art and Design Review*, 7, 1-9.

<https://doi.org/10.4236/adr.2019.71001>

Received: November 30, 2018

Accepted: December 21, 2018

Published: December 24, 2018

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Abstract

User personas are one of the most understandable deliverables which used to improve user experience and enhance design communication in web design process. Myriad studies and design research were conducted in this area which was largely based on qualitative research methods. This posted a challenge empirically in the validation of the personas created. To set on this gap, a qualitative-quantitative validation method was adapted with the focus in the three main attributes of personas: user goals, behaviours, and attitudes in this research to create student web user personas in the School of The Arts, Universiti Sains Malaysia web site. As an outcome, a set of art and design student web user personas were presented.

Keywords

Personas, User Experience, User Centred-Design, Qualitative-Quantitative Research

1. Introduction

User-centered design (UCD) and usability studies have a long history in the field of information technology, engineering and industry design where the aim of the study is to ease the use and learnability of a human-made object. This includes the use of web site interface and how it interacts with the users and to design with the needs and wants of the user in mind. User Experience (UX) design comes later with design which intended to cover all aspects of the person's experience (Norman, Miller, & Henderson, 1995). Research in understanding the user's behaviour and experience when using the web become crucial. Traditional user research methods such as questionnaires and interviews are often too com-

plex or too cumbersome to digest (Adlin & Pruitt, 2006). Furthermore, there is always a problem in how designers convert the statistical research finding into the design outcome. Personas which were first introduced by Alan Cooper (1998) become a popular design tool in fulfilling this gap. The persona method has then gained a substantial following among designers (Chapman & Milham, 2006) and is a standard component of user experience in web design.

In Malaysia context, research into the web design practice in Malaysia has shown that the awareness of usability standard and user experience is almost non-existent regardless in both government and local web design practice (Hussein, Mahmud, & Yeo, 2010; Yeo, et al., 2011). In the design of Malaysia government web sites user studies and task analyses were usually never conducted during web site development process (Hussein, et al., 2010). Similarly, user research and the use of personas are not high in the professional awareness among the Malaysia web designers.

This research serves as a pioneer study in engaging personas studies and usage in design process, and the research model created in this research serves as a catalyst in promoting engagement of personas in design process as well as the adaptation of user experience design in the local design practice.

In this research, we conducted a review on the existing methods used in user personas researches, adapted the appropriate methods and created web user personas for the students in The School of The Arts, Universiti Sains Malaysia. This research not only served as a catalyst in personas research in Malaysia, it also provided insight to the needs, preferences, goals, behaviours and attitudes of the designated web user groups in a contextualized approach.

2. Literature Review

The Personas are critical method for orienting web design and development team to user experience. Introduced by Cooper (1998), personas are referred to a *fictitious description of users*. Personas are ways to understand the people who the design is for, as a fictional life human being and not something in statistic as in the normal scientific research. The advantage of fictitious user descriptions in personas is its ability to encourage communication about the target groups and support arguments about features. Personas provide imaginary quality; provide an empathy with the users where other abstract methods like user scenario studies provide inconsistency in the conception of the users. The personas can function as a vehicle for engagement and it can support a holistic understanding of the user. Personas support the design process by communicating the essence of the users through writing techniques.

A common understanding of personas is that it consists of a textual description of a fictional user. Regardless of the different methods and approaches used, a textual description of personas basically consists of the names, basic demographics, pattern of product usages, goals, behaviours and attitudes, accompanied by a pictorial attachment of the personas. Mulder (2006) suggested the

main attributes of personas should consist of the descriptions of the users' goals, behaviours and attitudes. In most literature the personas descriptions related to Cooper's method where goals are a central part of the personas description (Nielsen, Hansen, & Storgaard, 2014). Goals are what users want to do in a web site. User goals are often different from what the designers expect it to be. A goal is an expectation of an end condition for the user (Cooper, Reimann, & Cronin, 2007), and goals motivate users to use the web site. Goals can be captured by interview with the users and understand why they visit the web site. Different users have different goals, and it is crucial to identify these goals in order to learn about the different needs of different users. The main design objective of an effective web design should be to fulfill the different goals of the user. However, if the goals describe about the objectives of users visiting a web site, the behaviours and attitudes describe about how users actually behave and perceive themselves when visit a web site. A human being may behave and perceive differently compare to what they think they are doing. The use of the attributes of personas goals, behaviours and attitudes has a triangulation benefit in the personas creation segmentation process, as what (Mulder, 2006) claimed "*What people say isn't what they do.*"

This research focused in three key attributes of the personas which are: Goals, Behaviours and Attitude. The elaboration of the three attributes are as below:

- Goals—What users want to do.
- Behaviours—How they do it.
- Attitudes—How they perceive themselves.

3. Methodology

Various studies and approaches were conducted since 1990s but there is no common method to create personas. Key personas creation writings (see Adlin & Pruitt, 2006; Cooper, 2003; Mulder, 2006; Nielsen, et al., 2014; Norman, 2004) postulated various methods, data gathering, data analysis, descriptions and implementations. It depends on who are the audiences, how the designers plan to use the personas and how much time the projects were granted. As posited by Mulder (2006), it should be tailored according to the situation and needs.

The scientific foundation of the personas creation method was qualitative (Nielsen, 2018). This has been criticized for empiricism for its fictional character (Chapman & Milham, 2006). The qualitative approach in personas posed some limitation, namely: accuracy of the personas created, lack of in depth understanding, and hard to attain scientific acceptance (Thoma & Williams, 2009). Mixed method approach was advocated as the better solution for these provided the research team has a length of time for the personas creation. Validation of the personas is a challenging task in personas creation and many attempts and suggestions were posited. In this research a qualitative-quantitative mixed method was adapted.

Based on the theoretical perspective of constructivism, this research used the

mixed methods of qualitative and quantitative research to investigate the web user preferences and identify the user goals, behaviours and attitudes. There are four phases in this research. Phase one, a quantitative survey with questionnaires distributed to the students participants. Phase two, segmentation process of the survey data. Phase three, a quantitative and qualitative researches involved semi-structured interview and task analysis to validate the phase one findings. Phase four, the writing of the personas. Guided by Cooper (2003); Cooper, et al. (2007) and Mulder (2006) the mixed methods research design was illustrated as in Figure 1.

4. Data Analysis

A survey was conducted with 83 students based on random sampling among the art and design students intake batch 2016/2017. The survey questions focused in investigating the three attribute areas of goals, behaviours and attitudes with other demographical attributes like age, gender, and educational backgrounds. Cross tabulation analysis was carried out to analysis the survey data to identify the goals, behaviours and attitudes patterns in the data—this procedure followed by a segmentation process (Mulder, 2006). Data points which have commonalities were gathered and grouped to form user groups or segments. A total of four segments were identified through this process. Eight students (two for each segment) that matched the characters of the identified segments were selected to participate in the second phase of the personas creation process which was the semi-structured interview and task analysis.

The interview questions were divided into three sections to re-investigate about the main attributes which are goals, behaviours and attributes. Interview

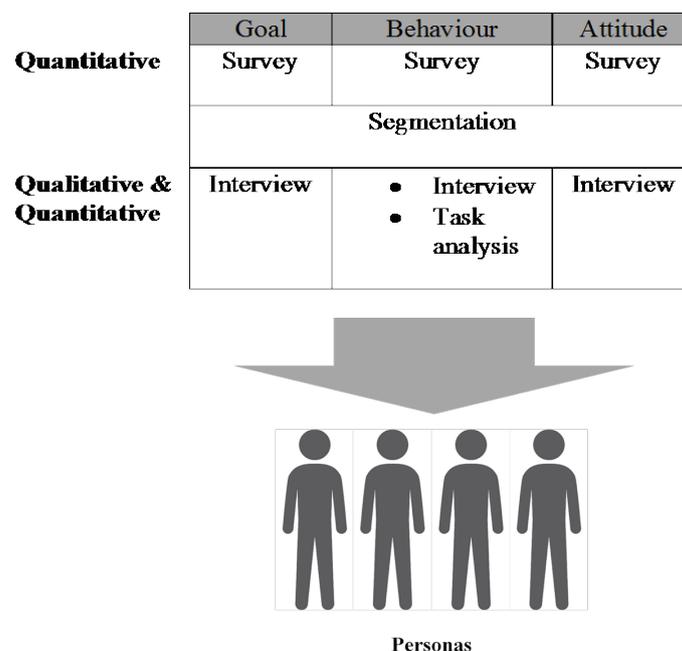


Figure 1. Qualitative-quantitative research approach for the personas creation

outcome were transcribed manually into English and analyzed manually by reading each transcript guided by Goodwin (2008). Similar and significant phrases were tag and recorded according to each question. User goals; behaviours and attribute patterns were grouped and identified. The patterns were later compare with the quantitative survey findings earlier to validate the result. Significant phrases were picked out and used as the quotes for the goals and attitudes of the personas. Findings of this process are shown in **Table 1**.

Task analysis was conducted with the same eight interview participants. Each participant was given a particular web surfing task to complete. The process were observed and recorded in video and it was analyzed to identify the participants' surfing habits and favourite page spots. The results were later compared with the survey data for validation. Two key sub attributes for the personas behaviours were discovered which are: 1) First click-in page and 2) Page often visits.

Table 1. Personas goals and attitudes identified.

Personas	Identified User Goals and Attitudes	
	User Goals	Attitudes
Aishah Farhan	To learn and seek information about art and design knowledge.	A highly motivated and hardworking individual, who has recently completed her STPM, achieving excellent grades in both Arts and economics. Seeking an opportunity in the arts industry to build upon a keen interest and start a career as a freelancer. Eventual career goal is to become a fully-qualified and experienced designer, with the longer-term aspiration of moving into project collaboration.
Muhammad Faris Abu Hassan	To get the latest news and information about events in the school of the arts.	Harris is an energetic and enthusiastic person who enjoys a challenge and achieving personal goals. His present career aim is to work within design field because he enjoys working with computers, he enjoys the environment and he finds the work interesting and satisfying. The opportunity to learn new skills and work with new technologies and software are particularly attractive to him.
Christine Low	To learn about the programs offered in the school of the arts.	Christine is a hardworking, honest individual. She is a good timekeeper, always willing to learn new skills. She is friendly, helpful and polite, have a good sense of humour. She is able to work independently in busy environments and also within a team setting. She is outgoing and tactful, and able to listen effectively when solving problems.
Tana Sivabalan	To get the contact information about the faculty members and administration staffs.	During her Form 6, she successfully combined her studies with work and other commitments showing herself to be self-motivated, organised and capable of working under pressure. She has a clear, logical mind with a practical approach to problem solving and a drive to see things through to completion. She enjoys working on her own initiative or in a team. In short, she is reliable, trustworthy, hardworking and eager to learn and have a genuine interest in design industry.

5. Result

A total of four personas were identified and created as the result of this research (see **Appendix**). Each persona was given a real name to make it look vivid and life. Naming ideas were based on the popular names among the students. Illustrated images were given to the personas based on their ages, genders and ethnicities to give it a natural feeling (Madsen, McKagan, Sayre, Martinuk, & Bell, 2014). There are three females and one male personas, all in the age range of 20 - 21 years old as the result from the segmentation findings which were representing the popular user group of the students. Ethnicity division also created and guided under the same reason. User goals and attitudes were selected from the quotes in the transcripts. The user behaviours as the result of the comparison and validation from the survey, interview and task analysis were formulated and presented in the form of six substitutes as in: 1) Internet connection, 2) Internet activity, 3) Social media, 4) First know about the internet, 5) First click-in page, 6) Page often visit. The result shows a complete set of textural descriptions of four personas representing the student web users. It acts as a tool to provide useful insight to the designers to understand the users better and develop web site according to the needs and preferences of the users to enhance the user experience.

6. Conclusion

This research showed the ability of qualitative-quantitative methods in providing complementation and validation to the process of personas creation. It eliminated the human bias influences in qualitative methods used in most of the personas creation practices. Empirically this approach provides a stronger foundation with quantitative data to support and defend the validity of the personas created. The shortcoming of this approach would be it needs longer time, involves many people and a complex process to execute. However, it provides intense and valid insights of the users represented, and it is a well worth method to use if time and manpower condition are allowed. The research served as a catalyst in personas research in Malaysia, it also provides insight to the needs, preferences, goals, behaviours and attitudes of the designated web user groups in a contextualized approach.

Acknowledgements

We sincerely thank all the research participants for their precious time and valuable insights and special thanks to Farizzatul Syahnaz Mohd Mokhtar for creating the personas illustrations.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix



KEY CHARACTER
 Age: 20
 Gender: Female
 Education Level: STPM
 Devices Used to Serve Internet: Laptop, smart phone & PC
 Home Address: Georgetown, Penang

USER GOALS
 To learn and seek information about art and design related knowledge.

AISHAH FARHAN
 A highly motivated and hardworking individual, who has recently completed her STPM, achieving excellent grades in both Arts and economics. Seeking an opportunity in the arts industry to build upon a keen interest and start a career as a freelancer. Eventual career goal is to become a fully-qualified and experienced designer, with the longer-term aspiration of moving into project collaboration.

BEHAVIOURS

Internet connection	First Know about the website via
Wifi 20%	Google Search 20%
Telephone Data 74%	USM Main Portal 57%
Place where I access internet	School Teacher 14%
My room 20%	
Anywhere 74%	
Internet Activity	First Click-in Page
Entertainment 10%	About Us 20%
Social Media 40%	Programme 50%
E-Learning 20%	Activities 24%
Social Media	Page Often Visit
Facebook 22%	About Us 20%
Instagram 20%	Programme 57%
Whatsapp 42%	Activities 14%

Spent 6-10 hours online per day.
 First visited the website 4-6 months ago.



KEY CHARACTER
 Age: 21
 Gender: Male
 Education Level: Diploma
 Devices Used to Serve Internet: Laptop & smart phone
 Home Address: Alor Setar, Kedah

USER GOALS
 To get the latest news and information about events in the school of the arts.

MUHAMMAD HARRIS ABU HASAN
 Harris is an energetic and enthusiastic person who enjoys a challenge and achieving personal goals. His present career aim is to work within design field because he enjoys working with computers, he enjoys the environment and he finds the work interesting and satisfying. The opportunity to learn new skills and work with new technologies and software are particularly attractive to him.

BEHAVIOURS

Internet connection	First Know about the website via
Wifi 74%	Google Search 56%
Telephone Data 26%	USM Main Portal 17%
Place where I access internet	School Teacher 37%
My room 16%	
Anywhere 64%	
Internet Activity	First Click-in Page
Entertainment 21%	About Us 33%
Social Media 70%	Programme 20%
E-Learning 9%	Activities 37%
Social Media	Page Often Visit
Facebook 45%	About Us 20%
Instagram 14%	Programme 59%
Whatsapp 21%	Activities 21%

Spent 1-5 hours online per day.
 First visited the website 1-3 months ago.



KEY CHARACTER
 Age: 20
 Gender: Female
 Education Level: STPM
 Devices Used to Serve Internet: Laptop & smart phone
 Home Address: Kota Bahru, Kelantan

USER GOAL
 To learn about the programs offered in the school of the arts.

CHRISTINE LOW
 Christine is a hard working, honest individual. She is a good timekeeper, always willing to learn new skills. She is friendly, helpful and polite, have a good sense of humour. She is able to work independently in busy environments and also within a team setting. She is outgoing and tactful, and able to listen effectively when solving problems. Lorem ipsum

BEHAVIOURS

Internet connection	First Know about the website via
Wifi 39%	Google Search 20%
Telephone Data 41%	USM Main Portal 68%
Place where I access internet	School Teacher 12%
My room 71%	
Anywhere 21%	
Internet Activity	First Click-in Page
Entertainment 10%	About Us 16%
Social Media 70%	Programme 71%
E-Learning 20%	Activities 4%
Social Media	Page Often Visit
Facebook 39%	About Us 21%
Instagram 27%	Programme 59%
Whatsapp 42%	Activities 20%

Spent 1-5 hours online per day.
 First visited the website 7 months ago and above.



TANA SIVABALAN

During her Form 6 , she successfully combined her studies with work and other commitments showing herself to be self-motivated, organised and capable of working under pressure. She has a clear, logical mind with a practical approach to problem solving and a drive to see things through to completion. She enjoy working on her own initiative or in a team. In short, she is reliable, trustworthy, hardworking and eager to learn and have a genuine interest in design industry.

KEY CHARACTER

Age: 20
 Gender: Female
 Education Level: STPM
 Devices Used to Serve Internet:
 Laptop & smart phone
 Home Address: Setapak, Kuala Lumpur

USER GOALS

To get the contact information about the faculty members and administration staffs.

BEHAVIOURS

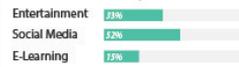
Internet connection



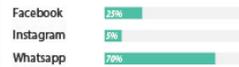
Place where I access internet



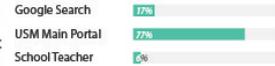
Internet Activity



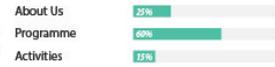
Social Media



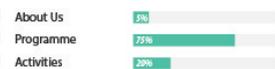
First Know about the website via



First Click-in Page



Page Often Visit



Spent 10 hours online per day.
 First visited the website 1-3 months ago.