

# How Does Duolingo Integrates Emotional Design

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**ABSTRACT.** *This essay aims at examining the patterns of expression of emotional design through analysing a second language learning app called Duolingo, which potentially offers suggestions on emotional design when designing mobile applications for second language acquisition.*

**KEYWORDS:** *Emotional design, Mobile application, Duolingo, Second language learning*

## 1. Introduction

Learning a second language online has become an increasing trend. The growing numbers of users of various online language learning platforms prove this. For example, Duolingo sees a growth in users by 300million by 2019. The figure from Babble shows a similar trend from 0 to 100000000 paid subscriptions from 2007 to 2016. A report estimates that the online language education market will increase by 13% since 2019 and reach \$10 billion by 2025, which reflects such a growing trend.

### 1.1 Duolingo

Duolingo is a free-of-charge language learning platform which includes both a web form and a mobile application form. This essay will discuss the mobile application version. Since 2009, the year of its establishment, Duolingo has delivered service for over 300 million users of 30 languages, which makes it into the most popular language education platform. Personalised education, making learning fun and being accessible universally are the features of it.

### 1.2 What is Emotional Design

Emotional design was first proposed by designer and psychologist Donald Norman in his book *The Design of Everyday Things*. He suggested that apart from usability and practicality, the emotional side of the design is also important. Norman also indicated that emotional design can add up the feeling of pleasure, help to strengthen the relationship between the user and the product, allows the product to serve the user's needs. On the contrary, if a designer does not consider the emotional aspect of users, the designed product may bring negative user experiences, which leads to bad emotions and potentially affect user's decision-making process.

Norman brings up three aspects of a design. Visceral, behavioural and reflective.

Visceral: this is linked to the instinct aspect of human emotion. It is related to the sensory satisfaction. For example, people feel happy when they see attractive interfaces while they feel scared when they see scary pictures.

Behavioural: this is related to brain processes. When it comes to product design. It is related to effectiveness of a product.

Reflective: this is related to the contemplative aspect of human emotion. It represents the relationship between a product and a user, which is usually related to self-image and memories.

## 2. Examine How Duolingo Express Emotional Design

As a world leading language learning application, Duolingo considers the emotional aspect besides its core functions. In this part, the ways of how Duolingo integrates emotional design into the application will be examined.

## ***2.1 Reflective Level***

### ***2.1.1 Contextualisation Teaching and Learning***

Compared with some language platforms which offers repetitive memorising tasks, Duolingo embraced the situational teaching and learning method. This allows users to recall their memories, relate their situations to the offered occasions (e.g. having breakfast, dating, birthday), which is important for second language acquisition.

### ***2.1.2 Funny Content***

In order to offer joyful learning experiences, Duolingo uses humourous teaching content. For example, in lesson two – dating, Duolingo designed a funny scene that an online-dating couple misidentified others as their partners, which is unusual compared with other teaching materials. Using such content can help to build up a funny and casual brand image.

### ***2.1.3 Gamified Learning Experience***

Duolingo employs game dynamics and game elements, which allows users raises users' motive of learning. By implement this, users' engagement can be increased. A point-based promotion system is adopted. A user cannot access to the next level if they do not finish the study at the former one, which raise users' internal motive by raising their curiosity and the desire for learning. Game elements such as a leaderboard, badges, diamonds, specific titles (e.g. the scholar, the noble) are utilised to increase users' external motive.

### ***2.1.4 The Socio-Pleasure***

Users can gain enjoyment from socialising through products. Duolingo integrates functions such as 'share to Moments in Wechat', 'invite friends', 'being presented on a leaderboard', 'showing title and identities'. On one hand, a user have tangible outcomes (such as titles) that allow them to present an image of a positive learner. On the other hand, such functions improve their interaction with friends.

## ***2.2 Behavioural Level***

At behavioural level, Duolingo integrates emotional considerations into its design mainly by these ways: 1) alleviate the displeasure of caused by confusion or low efficacy; 2) increase pleasure by increasing usability of the mobile application. This part will examine how Duolingo achieve these with examples.

### ***2.2.1 Alleviate the Displeasure of Caused by Confusion or Low Efficacy***

#### ***(1) At the Stage of Customised Planning***

Duolingo will ask the learning reasons (e.g. for tourist, for work, for tests), which potentially make learners: 1) worry less whether what the platform offer is compatible with their anticipation or not; 2) increase users' confidence by affirming the learning outcome.

When choosing learning goals, Duolingo emphasises that 'this can be changed', which helps ease the sense of unrest because the chosen plan cannot be changed. It also increases the feeling of control towards the application.

#### ***(2) At the Stage of Study***

During the study period, Duolingo offers in-app helping services, which helps decreasing the time and effort in transferring to other applications. For example, if a user encounters a word that they do not understand, they can click the word and a bubble will appear to show the meaning of it. Therefore the user does not have to refer to another application.

### ***2.2.2 Increase Pleasure by Increasing Usability***

#### ***(1) The Interaction Throughout the Application is Relatively Simple***

Firstly, the overall information is constructed in a clear way: there is not complicated hidden function or information in Duolingo. The application contains five main portions (figure 1), which is linked to five taps at the bottom navigation bar and each part does not contain irrelevant content, so users do not need to spend too much time and effort on exploring the application. The application therefore has higher affordance, which means users' cognitive load is lowered.



Figure 1

Secondly, in learning and exercising mode, questions are mainly designed as multiple choices, matching (figure 2), filling in the blanks with chosen content. Therefore, dragging and clicking are the main form in which users interact with interfaces, while typing is excluded in this case, which simplified how users manipulate elements in interfaces.



Figure 2

## (2) Immediate Feedbacks

Feedbacks are important in the process of learning. Duolingo employs an immediate grading mechanism that allows learners to gain their feedbacks of particular knowledge points. For example, when a user gives a correct answer, Duolingo will go directly to the next question; when a user makes a mistake, the system will present the correct answer and list relevant knowledge points. This improves the efficacy by omitting content that is less important, which potentially improves users' sense of pleasure.

## 2.3 Visceral Level (Sensory Level)

### 2.3.1 A Unified Design Style

Visual elements of Duolingo are unified – it utilises bright colours, adorable cartoon characters and image-focused interfaces. The unity can strengthen the brand image in users' minds.

### 2.3.2 Visually Clear

#### (1) Clear Information Architecture Visually

Duolingo uses the same set of visual elements for information at the same level. Users therefore can distinguish information from different levels. Take the castles and circles in every unit as an example. Castles refer to 'units' and circles with graphics represents contents in each unit (figure 3). Another example is the font size and font colour in every page – text information of the same importance is presented in the same font style (figure 4).

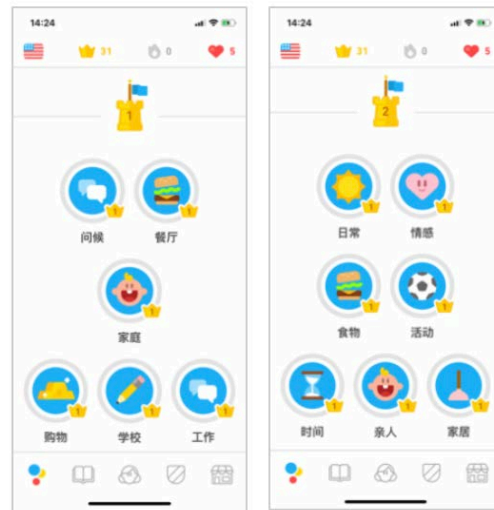


Figure 3



Figure 4

#### (2) Distinguish Information through Visual Effects

Duolingo using different effects to distinguish information. For example: 1) In Duolingo Stories, learned lessons would be designed in the colour of gold, while the unstudied ones are in normal colours (figure 5). 2) Sentences of conversations are designed in bubbles while additional commentaries are designed smaller outside of bubbles (figure 6). 3) In the page of grammar, key grammar points are marked with special colours (figure 7).



Figure 5

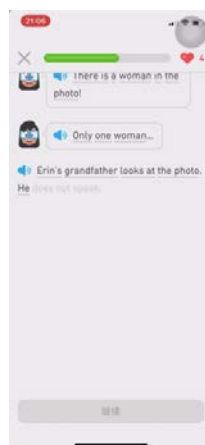


Figure 6



Figure 7

### 2.3.3 Using Appropriate Metaphors

Visual elements with metaphors are used appropriately in Duolingo, which matches users' mental model. In other words, those visual elements do not have conflicts of what users can associate. This makes users understand the interface more easily. For instance, egg represents 'the basis'; turtle represents 'slow'; the colour of red represents 'warning'.

### 2.3.4 Personification Based on Different Scenarios

Movements, facial expressions, props of the mascot of Duolingo, a green owl, change along with scenarios, which shows empathy to learners (figure 8). For example, in the launching page, the mascot presents a big smile and waves its wings – this is similar to human's greeting in real life. Another example of this is when a user makes a decision to quit the test, tears burst from the owl's eyes and the words 'It is uneasy for you to come to this stage. Are you sure to quit this exercise?'. This strongly creates a feeling of "parting" and "reluctant", which corresponds to the situation of parting in people's daily life. In loading pages, the mascot will sing and dance (and the screen will show linguistic knowledge) in order to ease users' feeling of boredom.

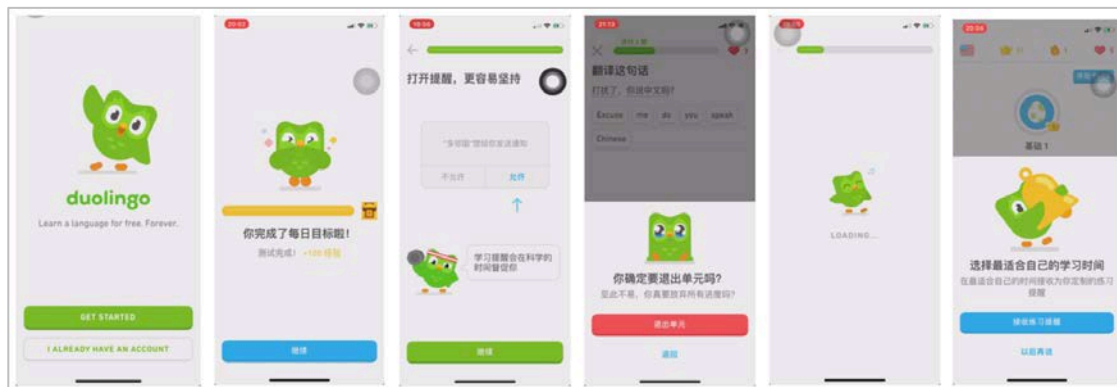


Figure 5

### 2.3.5 Appropriate and Timely Audio&Visual Feedbacks

Audio notifications change corresponding to situations. When a learner finishes the question correctly, there will be a sound that represents happiness, while another kind of sound that represent of the feeling of sorrow will be played if a user makes a mistake.

When a user completes a certain task, visual information such as treasure chest, energy bar, as well as verbal information such as "+ experience point", "you have completed your daily goal!" will be presented, which increase user's sense of accomplishment.

### 2.3.6 Relief Users' Mental Burden and Increase Encouragement through Friendly Language Skills

At the learning goal setting stage, a sentence -'You can change your learning goal anytime later' is presented as something said by the mascot, which ensures users understand that they have freedom to control their learning process. Similarly, words such as 'Notification can help you to keep at your learning goal' are shown to inform users to turn on notification, while many of other mobile application would not state the reason why they hope users to turn it on.

In learning stage, besides presenting diamonds and points, Duolingo will show compliments verbally such as 'It is uneasy to get such achievement. You are so great!'. This helps increasing users' confidence.

## 3. Conclusion

Through examining how Duolingo express emotional design, some design methods can be summarised:

Level	Methods
Reflective	1)Situational education. 2) Gamification. 3) Sociality. 4) Personalised setting.
Behavioural	1)Enquiring users of learning goals and learning habits. 2)Adding easy access for further/ relevant information in order to lessen time and effort to refer to those information through other applications. 3)Offering immediate feedbacks in testing stage. 4)Simplified overall interaction.
Visceral	1)A unified design style. 2)Presenting information clear in order to lessen cognitive load. 3)Offering appropriate visual and audio feedbacks. 4)Personification based on different scenarios in order to show empathy. 5)Relieving user's mental burden and confusion and encourage users by friendly language skills.

## References

- [1] [https://press.babbel.com/en/releases/2016-01-20-Babbel\\_Global\\_User\\_Survey.html](https://press.babbel.com/en/releases/2016-01-20-Babbel_Global_User_Survey.html)
- [2] <https://en.duolingo.com/info>
- [3] The Design of Everyday Things. 23
- [4] The Design of Everyday Things. 54
- [5] Heil, C., Wu, J., Lee, J. and Schmidt, T (2016). A Review of Mobile Language Learning Applications: Trends, Challenges, and Opportunities. The EuroCALL Review, vol.24, no.2, pp.32.
- [6] Kim, S., Song, K., Lockee, B. and Burton, J., 2018. Gamification In Learning And Education.
- [7] Kim, S., Song, K., Lockee, B. and Burton, J., 2018. Gamification In Learning And Education.
- [8] Kim, S., Song, K., Lockee, B. and Burton, J., 2018. Gamification In Learning And Education.
- [9] Design Issues (2002). Designing Pleasurable Products: An Introduction to the New Human Factors by Patrick W. Jordan (London: Taylor and Francis, 2000) 216 pages, illustrated, \$65.00 (hardback) ISBN 0748408444. 18(1), pp.87-88.