

Decoding User Sentiments and Styles: A Comparative Analysis of Duolingo and Babbel through Appraisal Theory and TAM

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ARTICLE INFO	ABSTRACT
Article History: Received: March 23, 2025 Revised: May 02, 2025 Accepted: May 12, 2025 Available Online: May 17, 2025	<i>This study performs a comparative analysis of user sentiments and stylistic expressions in feedback reviews for two prominent mobile-assisted language learning (MALL) applications, Duolingo and Babbel, utilising Appraisal Theory (Martin and White, 2005) and the Technology Acceptance Model (Davis,1989). With the rapid growth of language learning platforms, understanding user experiences is crucial for enhancing application design and functionality. By employing a mixed methods approach, including qualitative and quantitative analyses of over 190 user reviews for each app from public domains, the research identifies trends in user satisfaction, areas of dissatisfaction, and stylistic patterns in user feedback. The findings reveal significant differences in user engagement and preferences between the two platforms, highlighting the importance of gamification in Duolingo and Babbel's structured approach. This study underscores the value of sentiment and stylistic analysis in informing the development of effective language learning applications that cater to diverse learner needs.</i>
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Introduction

Mobile technologies have extensively changed the approach to learning new languages through online tools such as Duolingo and Babbel, mobile-assisted language learning (MALL). Duolingo is fun and free, targeting the audience that likes to solve levels and games, while Babbel focuses on the delivery of set lessons and concentrates on the communicative skills of the learner. These platforms have grown into large communities. Duolingo has registered more than 120M users across the globe, which shows the increasing need for language learning applications (Fhonna,

2024). The difficulty is that users who interact with such platforms often provide feedback that can make or break the platform and must be deciphered to improve the platform's design, function, and performance. Reviews are sources of rich information on user satisfaction, users' engagement level, and areas of improvement, enabling developers to obtain sensitive intelligence on the market for edtech applications and to compete effectively in the fast-evolving edtech environment (Chohan et al., 2020; Shortt et al., 2021). Thus, using the results of sentiment and stylistic analysis, this paper aims to extract subtle user attitudes and outline the ways Duolingo and Babbel improve.

Rationale and Significance of the Study

Sentiment and stylistic analysis of the users' feedback is significant in optimising the kinds of apps that should be developed and improving the satisfaction that users derive from them. Studies prove that user reviews influence the developmental approach and users' engagement more, especially if feedback is grouped into positive, negative, or mixed (Zhang et. al., 2021). For instance, Duolingo's use of gameplay elements, like instant feedback and rewards, is described to improve awareness and motivation, which are two important variables in second language learning (Loewen et al., 2019; Kamsik, 2023). Qualitative data indicate the effective and persuasive aspects of the use, such as enthusiasm to continue using an app or a product to achieve personal goals (James & Mayer, 2018). On the other hand, the negative feedback received from the clients is the confirmation of the specific features or instructional content that the clients have found unhelpful and irritating (Loewen et al., 2019; Ergün-Elverici, 2023).

This research is valuable for helping to close the gaps between user feedback and subsequent app developments using sentiment and stylistic assessment of Duolingo and Babbel reviews. The results of the present research offer a rich, theory-driven account of users' attitudes, balanced appraisals, and perceptions of ease of use and usefulness by employing the Appraisal Theory (Martin & White, 2005) and the Technology Acceptance Model (TAM) (Davis, 1989). The results are therefore relevant to help developers design effective MALL frameworks that will meet learner needs by ascertaining the notable discrepancies in learning preferences among users, all in the interest of improving the existing MALL and digital language learning spaces.

Research Objectives

1. To analyse and compare sentiment trends in user feedback for Duolingo and Babbel to identify user satisfaction and areas of dissatisfaction.
2. To examine stylistic patterns in user reviews, including tone, lexical choices, and rhetorical structures, to understand how users articulate their experiences.
3. To explore how user attitudes, engagement, and perceptions of ease of use and usefulness influence feedback for Duolingo and Babbel.

Research Questions

1. What are the key sentiment trends in user feedback for Duolingo and Babbel, and how do they compare?
2. What stylistic patterns characterise user reviews for each platform, and what do they reveal about user engagement and expectations?
3. How do user attitudes, emotional engagement, and perceptions of ease of use and usefulness differ between Duolingo and Babbel?

Literature Review

New learning technologies clearly define major changes in language acquisition, as nowadays learners have other opportunities that are more adaptable to their preferences. Among these technologies, application-based learning technologies like Duolingo and Babbel offer the best

strategies for learning languages. Research on effective strategies for increasing engagement and actual accomplishment of instruction indicates that learners are motivated and encouraged by incentives and recommendations within a game-based context (Bahari, 2024). On the other hand, and similarly to other business-oriented platforms, Babbel uses highly organised lessons focused on conversational aspects, which may be interesting for those who need a strict guide on how to acquire a new language. The two systems both focus on the user interface, which determines the efficiency and flexibility of learning aids (Syathroh et al., 2021).

The pandemic brought a drastic change by making online platforms even more popular than before, altering the approaches to teaching and learning. Digital resources have been found to offer a good level of flexibility and availability to the learners and thus improve students' satisfaction and involvement (Küçükler, 2021). Also, the latest technologies like chatbots and virtual reality (VR) have added more value to learning a language. Chatbots give feedback on activities and help to develop vocabulary; VR makes learners practice language in real-life situations (Bahari, 2024; Chen et al., 2022). These innovations support modern requirements for educational processes, introducing the concept of adaptivity and personalisation in foreign language teaching and learning (Cao, 2023; Deng, 2024).

The literature also describes the revolutionary role of integrated applications such as Duolingo and Babbel in mobile-assisted language learning (MALL). Duolingo motivates learners with fun and creates games to enhance its users' interest and focus; on the other hand, Babbel suits the learners who intend to learn with more focus and order. The COVID-19 pandemic also shifts the adoption trend of flexible and easily accessible tools, such as chatbots and virtual reality, which make personal and immersive learning. Khan and Tufail (2020) also focused on three dimensions of effectiveness, including user-oriented design to improve the effectiveness of digital learning environments, where flexibility and the ability to respond to the users' needs are critical aspects. This study posited that, according to the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use are especially salient constructs as they explain users' behavioural intentions. The current research extends this understanding to examine the Duolingo and Babbel apps and then presents an evaluation of the user feedback, discussing their advantages and limitations in the evolving MALL environment.

As technology advances, recognition of the unified parameters through consumer feedback, for example, via sentiment and stylistic assessment, becomes critical. We see feedback as a rich source of information about the effectiveness and inefficiency of platforms like Duolingo and Babbel, and as a motivation for enhancing performance.

Sentiment Analysis: Understanding User Experiences

The use of sentiment analysis is an important aspect in decoding customer experience, especially in scenarios such as the use of language learning applications, among others. Sentiment analysis is the process of analysing feedback systematically, and the result of this analysis is to show emotional response and attitude towards features and functionality that can be useful for developers. Apart from the actual numeric scores, SA determines attitudes within the comments of the users, supplementing the evaluation of customer satisfaction (Lee et al., 2017). For instance, aspects like gamification in Duolingo or structured lessons in Babbel bring out certain feelings that are so influential to users.

With the help of classification, developers can identify certain aspects: overall positive or negative and people's dissatisfaction with the prices or overcoming it with enthusiasm for the interactivity (Oghu, 2023). In the language-learning domain, sentiment analysis can reveal users' emotions regarding the gamified features, instructional effectiveness, and perceived utility or satisfaction

(Akbari et al., 2023). This kind of comprehension is possible at several levels and helps developers match these offerings with users' expectations and, thus, increase product loyalty and readiness to consider new or additional products. Moreover, the use of techniques based on both qualitative and quantitative approaches can be integrated into the system, producing a more profound analysis of the user's preference (Naz et al., 2023). Such insights are important for fine-tuning features of and ascertaining whether platforms conform to emerging learning requirements.

Stylistic Analysis: Tone, Lexical Choices, and Rhetorical Patterns

Stylistic analysis enriches the general understanding of given user feedback by analysing organisational features such as the tone of language, lexical loading, and rhetorical structures. The attitudes strongly influence the perception of satisfaction, while the reviews are generally quite positive, and the concerned platform gains added credibility with an enthusiastic attitude. For instance, users may provide joy and motivation-related words towards Duolingo's gamification, as Santi (2023) pointed out. Compared to positive feedback, attitudes of criticism or frustration in negative reviews focus on the aspect of usability or instructional information.

Other semi-formal elements in the reviews that can be extracted to gain additional information about the users are lexical. Thus, highly charged emotional words such as 'love', 'frustrated', and 'efficient' reveal the strength of the emotions, whereas technical terms point to the familiarity with concepts regarding language learning. The language of Babbel reviews, for example, is formal to some extent and refers to such characteristics as structure and organisation.

Recommendations for platforms are supported by personal experiences, for example, using Duolingo before travelling, and feature comparison helps developers to see what sets them apart. These styling components capture what is dear to users and areas that require a makeover, which provides the developer with a way to transform user satisfaction (Rekanar et al., 2020). Sentiment and stylistic analysis give a well-rounded view of the user experiences that shape their use of Duolingo and Babbel. These ideas support the idea of using feedback to improve features of social networks, solve problems, and increase users' activity. Filled with intellectual implications for the definition and methodological design of CALL, the study applies theories like Appraisal Theory and the Technology Acceptance Model while situating linguistic and technological approaches side by side, as the study has valuable implications for how language-learning platforms should be gradually developed. This approach is not only consistent with the timely demands of learners but also enhances the area of mobile-assisted language learning.

Theoretical Framework

This study is grounded in two key theoretical frameworks: the Appraisal Theory developed by Martin and White (2005), as well as the Technology Acceptance Model TAM (Davis, 1989). These frameworks give a coherent viewpoint to analyse the sentiment and appraisal pattern of the Duolingo and Babbel linguistic applications by the users, and they illuminate the users' attitude, involvement, and perception towards these linguistic learning applications.

Appraisal Theory

Appraisal Theory, defined by Martin and White (2005), can be described as a linguistic approach which analyses attitudes, emotions and graduation in discourse. It is especially useful for the current study, given that it allows identifying the specific emotional and appraisal language users use when describing their experiences with Duolingo and Babbel. The theory comprises three key domains:

1. **Attitude:** It examines how users express feelings, judgments, and appreciation, which is central to understanding user satisfaction and dissatisfaction.
2. **Engagement:** It is the analysis of the degree of alignment or disagreement in user feedback, reflecting polarised opinions about specific features.
3. **Gradation:** Focuses on the intensity of user sentiments, distinguishing between moderate and highly positive or negative feedback.

Such a scheme makes it possible to analyse the emotional tone of the reviews, as well as to distinguish patterns that reveal the subject's concern with certain app features and the intensity of opinionated responses. For instance, many people who have applied to Duolingo are given to emotional language since it is applied in a game format, while Babbel is a more formal language learning tool the reviews reflect more of a measure of endorsement and endorsement alone.

Technology Acceptance Model (TAM)

The theoretical framework used in the current study is also the Technology Acceptance Model developed by Davis in 1989. TAM focuses on two primary dimensions:

1. **Perceived Ease of Use:** Describes the level of ease with which users can interact with the platform or the system.
2. **Perceived Usefulness:** Concerns the extent to which the architecture of the platform conforms to users' functional and learning requirements.

TAM is used in this study to analyze the effects of the design as well as the content of Duolingo and Babbel on users' satisfaction. The high perceived ease of use of Duolingo thanks to the game-like and easy-to-navigate design stands in sharp comparison with the perceived low content depth that could prove too unfruitful for advanced learners. On the other hand, Babbel provides rigorous lessons, and it is perceived as being very useful to the serious learner; however, the parameters of usability and cost dampen Babbel's mass market.

Integration of Frameworks

This study is one of the first to apply both Appraisal Theory and TAM while investigating user feedback. Appraisal Theory helps to unveil the emotive and discursive components of the user reviews, whereas TAM tells how these attitudes are determined by the perception of the platforms' tool-enabling and tool-ease factors. Both frameworks allow for a richer understanding of the relationship between sentimental and stylistic features as well as their impact on users' perceptions of the platforms in question, providing specific recommendations for enhancing each platform.

Using this theoretical framework, user feedback in this study has been analysed in line with the linguistic and technological outlook to determine user needs and engagement.

Methodology

This study uses a mixed-methods approach involving qualitative and quantitative analyses of the users' feedback on Duolingo and Babbel language learning applications. By using the web scraping tool Scrapestorm, the reviews of the applications were collected from public domains such as the Google Play Store to have a variety of data. The sample included 190-plus reviews for each of Duolingo and Babbel. Publicly available data has been used in the study. Data preprocessing was conducted using SpaCy software for text cleaning, stop word removal, tokenisation, and lemmatisation to structure data for meaningful analysis. Sentiment analysis was conducted using NVivo software. Bar charting and treemapping were used to produce a relative comparison of the sentiment distribution of the two apps. Stylistic analysis was carried out by selecting the commonly used terms and employing the frequency of tone, formality, and intensity. Specification comparison was done to identify areas in which users perceive and prefer Duolingo

and Babbel differently by applying the Appraisal Theory and the Technology Acceptance Model (TAM).

Data Analysis and Discussion

Sentiment Analysis

Babbel Language Learning App

With the help of NVivo software, user reviews have been coded into sentiment categories:

- Very Positive
- Moderately Positive
- Moderately Negative
- Very Negative

This has made it easier to analyse customer feedback through the intent distribution of Babbel in various sentiments. This concluded that 87% of the feedback is positive, and most of them (54%) are moderately positive, in which users have given positive feedback for Babbel due to their structured learning and good lessons provided in the application. This category provides a clear indication of findings that the app works, albeit there are not many outright ‘wow’ factors that would fuel stronger positive emotions. A third (33%) share contains negative and consists of moderately negative (20%) and very negative (19%) feedback. These negative impressions suggest issues regarding utility, functionality or cost issues that keep on recurring. Although the response rate is very low, the scores obtained are very high (33/100), an indication that those who completed the course were very satisfied with the course, particularly the users who are intermediate or advanced learners, or those who are comfortable with structured learning like in Babbel. At the same time, it is the moderate and very negative feedback that indicates that the sources of dissatisfaction are to be found in such factors as lack of customisation, confusing navigation and unmet expectations regarding learning outcomes.

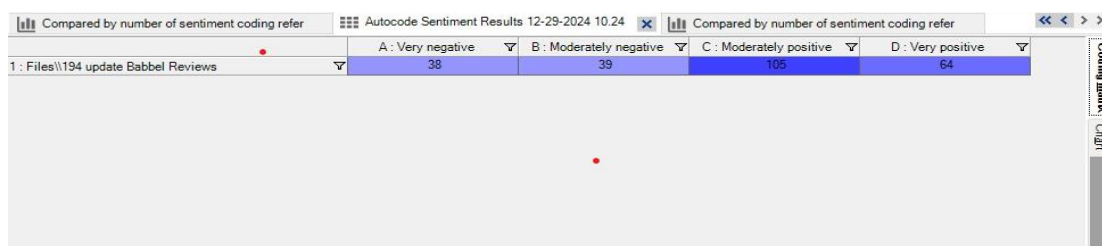


Figure 1: Sentiment distribution count of Babbel Reviews

Using the treemap, Babbel reviews can easily be categorised, making it easier to read user sentiments and other trends relating to the feedback given. The dominant colour of the treemap is positive, signifying that users have a positive disposition toward Babbel. This can be attributed to the high customer satisfaction with the service’s major features and selling points; its systematic lessons and grammar orientation, combined with the more businesslike approach, appealed to a broad audience, especially those who prefer formal methodology in language acquisition.

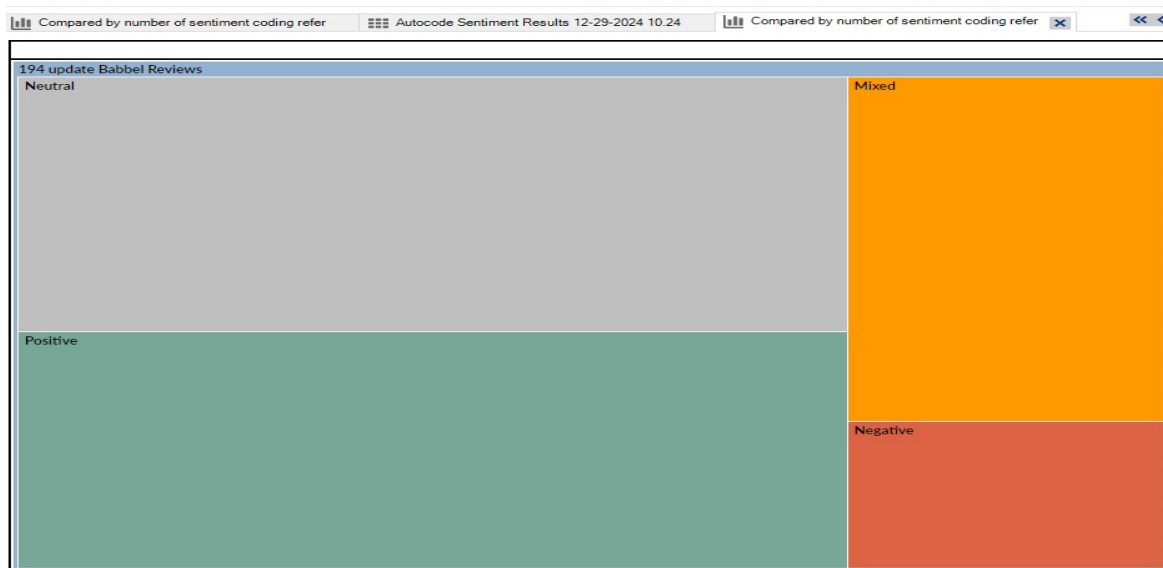


Figure 2: Treemap of sentiments of Babel Reviews

Many users provide mixed feedback, it can be seen that a large portion of the tree map is comprised of positive and negative feedback about Babel. Such mixed feelings usually stem from specific application components such as the price, options for customisation or the actual technicality of the application interface, which can be loved by some and despised by others. Although negative feedback is relatively smaller in percentage, but still significant and is directly associated with usability problems, subscription charges and lack of content. This identifies some pertinent areas that must be worked on to bring back dissatisfied users and limit the chances the client will consider other apps. On the other hand, there is very little neutral feedback, which can probably mean that most of the users have a well-defined stand about their experience in using Babel.

The average distribution pattern of the sentiments is endorsement of the positive comments, which is a strong trademark that puts Babel ahead in structured language learning. The existence of both positive and negative feedback serves as an indicator of the necessity to counterbalance the negative customer feedback regarding the website's usability and the prices offered. In turn, Babel should use positive feedback to promote its structured path as well as to collect more information about the negative feedback to determine what features they need to improve, and which can be tailored for specific clientele. To reduce negative perceptions, measures like offering free trials, different subscription packages, and improved customer support should be adopted to tackle complaints and expand the customer base.

In conclusion, the treemap shows Babel's success in fulfilling the positive user experience while identifying areas that need to be worked on. If Babel succeeds in managing mixed and negative feedback properly the company can improve users' satisfaction even more and make the platform stronger in its niche.

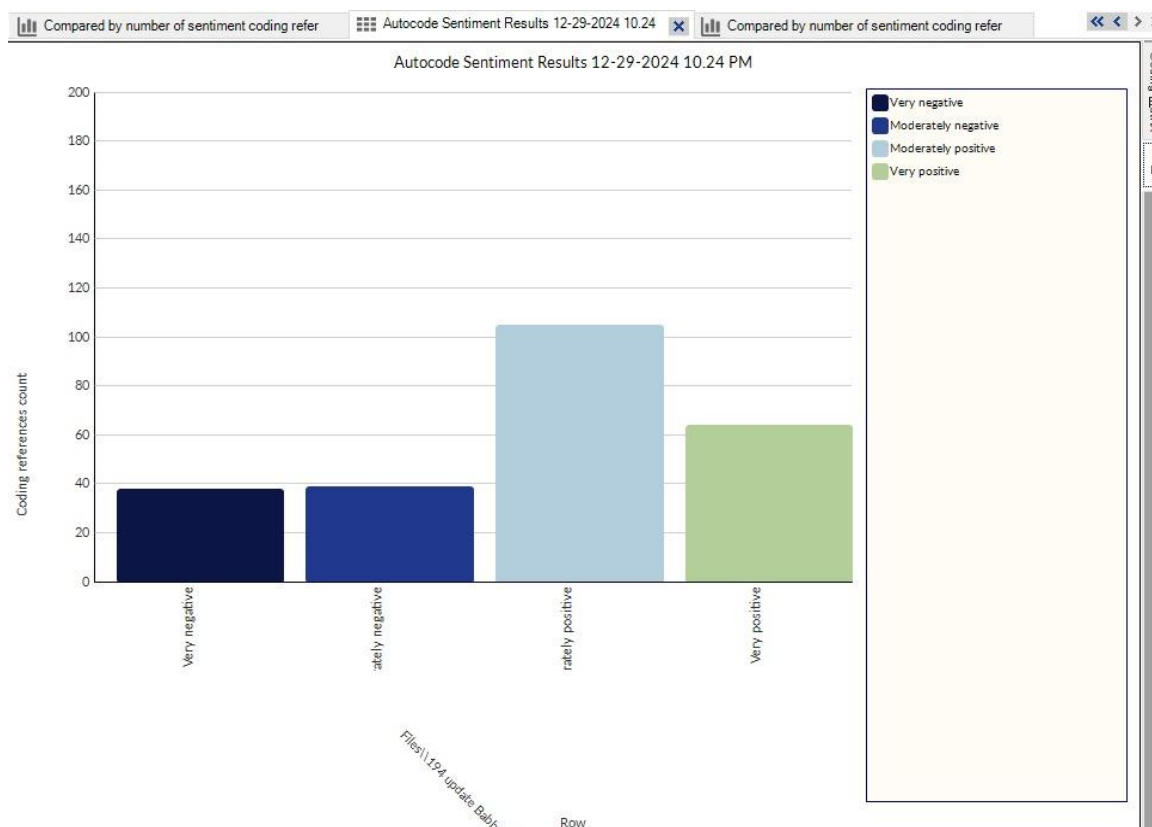


Figure 3: Bar chart of sentiments of Babbel Reviews

The bar chart reinforces all the findings made from the treemap in which the area of a green bar is significantly larger than that of a red bar, which indicates that positive user feedback is much more frequent than negative one, albeit being fewer in quantity. Both visuals give a proportional representation and give an insight into the fact that Babbel is more focused on delivering customer satisfaction with its unique approach to structured language learning. At the same time, the results specify the absolute need for further development, mostly associated with the issues of usability and customisation, as the sources of negativity.

Duolingo Language Learning App

The sentiment analysis for Duolingo entails distribution where positive feedback: 111 (58%) are moderately positive and 85 (45%) are very positive, showing that users are generally satisfied with the app's simple interface and use of the game approach when learning. Nevertheless, sixty-seven reviews out of the sample hold negative connotations of extreme intensity, and 97 reviews are of moderate negative intensity. Therefore, it can be concluded that although many users are again coming to Duolingo for usage convenience and interactive lessons, the complaints which have been repeatedly heard like 'lessons being repetitive', not being appropriate for higher level learners, 'technical constraints of app' and 'content limitations' are still a major disadvantage. The fact that there are way more positive than negative ones indicates a very bipolar usage, most probably due to the difference between an inexperienced and an expert user. In sum, Duolingo, as it is now designed and developed, stands out for offering a fun learning environment preferred by informal learners; at the same time, for more serious learners, Duolingo's lack of depth and personalisation causes the app to fail in satisfying learners of this category.

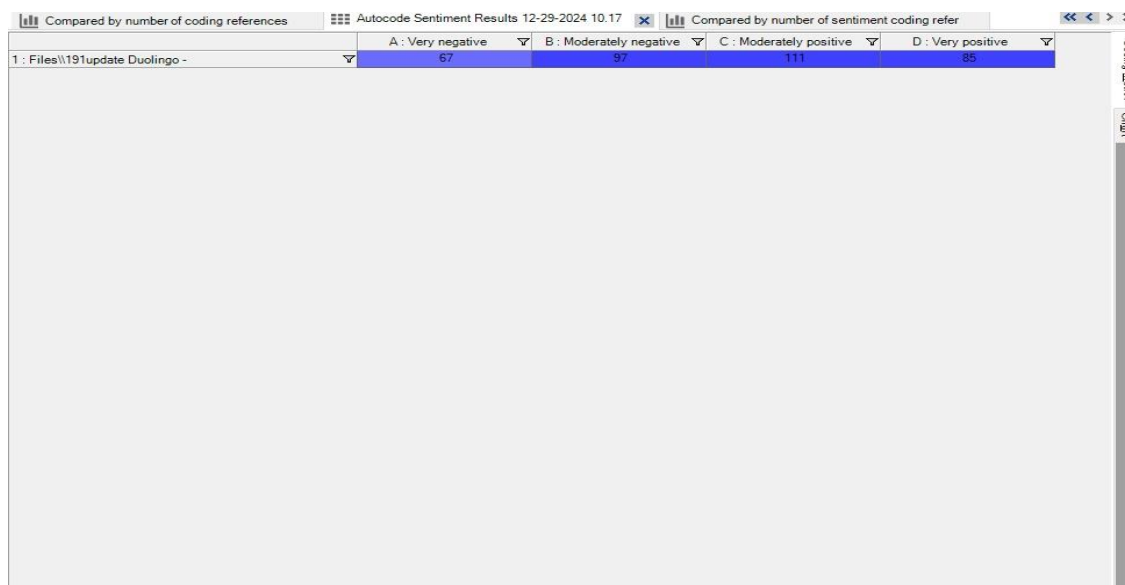


Figure 4: Sentiment distribution count of Duolingo Reviews

The bar chart we created for the Duolingo sentiment distribution clearly shows that most of the comments from users are positive. The relatively positive feelings are reflected in 111 reviews, the extremely positively charged words come second with 85 reviews, and together they total most of the reactions. This is a harbinger of the fact that the app excels in the method it uses to deliver knowledge in a fun and easy-to-follow approach for the newbie. However, negative feedback is meaningful, where 97 reviews are considered moderately negative feedback, and 67 reviews are labelled as very negative feedback. These are the signs of dissatisfaction, probably due to replaying lessons, the absence of complex and high-quality content, or a small choice of adjustments. While the proportion between very positive and negative feedback is more or less the same, it defines a rather split user experience: the app is rather useful for casual learners, but is unable to provide the experience expected by advanced users or those who are banned from learning a foreign language. On balance, Duolingo appears to have a very high appeal due to aspects of gamification and easy application, but it is essential to establish particular changes to make to enhance the appeal and become more helpful to as many people.

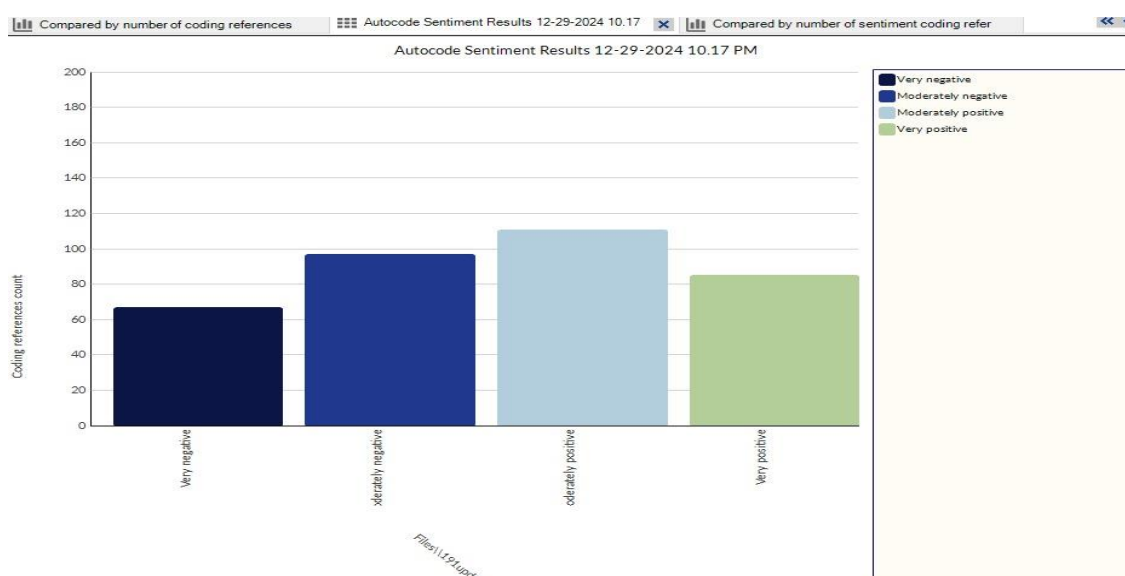


Figure 5: chart of sentiments of Duolingo Reviews

The treemap below summarises the Duolingo user feedback as a chart of sentiment distribution. The largest segment labelled 'green' shows positive sentiments, indicating that a significant number of consumers capture value in Duolingo's fun and game-like way of mastering new languages. However, a large orange part means that the reactions to the application are ambiguous; users experienced both moments of the use of the application that were to their liking and moments that were not. The red portion, signifying negative feedback, albeit smaller compared to the green portion, is still worth mentioning, including repetitive lessons, the absence of challenging materials, and the lack of flexibility in customisation. The neutral percentage is very low (grey line), meaning that most people do not have mixed feelings about the events they mentioned. In general, the treemap resets Duolingo on its strengths in attracting learners who use the app sporadically and finds opportunities for adding depth, personalisation, and additional features that would improve user satisfaction and decrease learners with mixed or negative ratings.

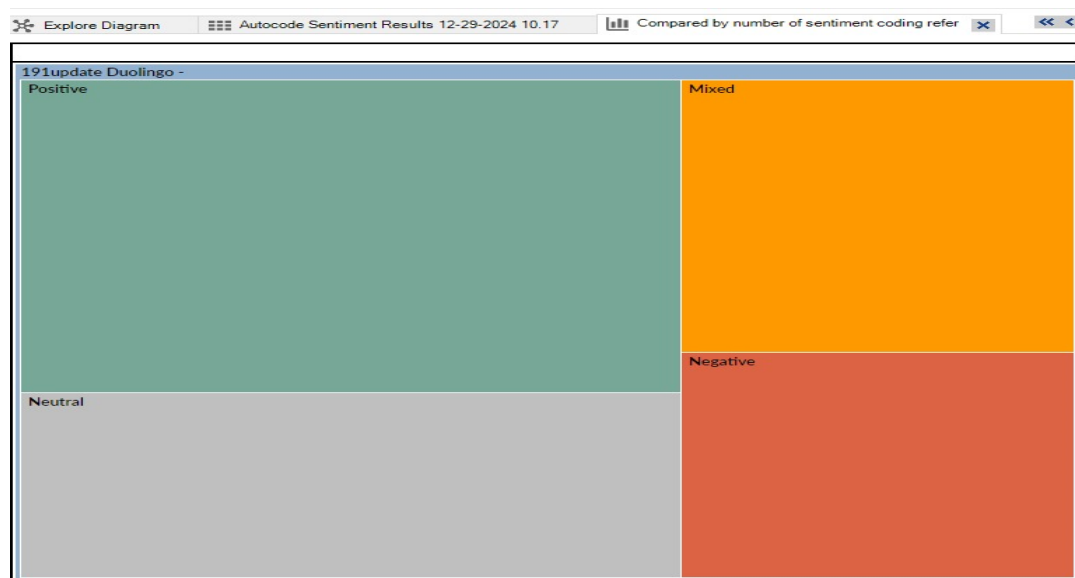


Figure 6: Treemap of sentiments of Duolingo Reviews

The sentiment analysis of users' feedback is based on the Appraisal Theory, which helped reveal attitudes, graduation, and engagement for both Duolingo and Babbel. In the case of Duolingo, it shows that people give mostly positive feedback related to the application due to the enjoyment and fun approach while learning. Of special interest is the high level of emotional connection, which shows that it effectively appeals to the casual learner audience. However, signals of negative feedback, which are normally associated with repetition and absence of the challenging material, are clear signs of possible enhancement of content depth and adaptivity. In the case of Babbel, the predominance of this type of result reiterates users being satisfied with the learning application for being formal and structured, especially about grammar and, therefore, conversational skills. However, the fluctuations concerning positive and negative perceptions indicate the existence of issues relating to performance, design, and feature personalisation that define areas in the UX that can be boosted.

The results of sentiment analysis for both apps corroborate the proposed Technology Acceptance Model, especially as it relates to perceived usefulness and perceived ease of use. As for Duolingo, positive attitudes mean high perceived ease due to the application's clear design and integration of game elements. However, several criticisms and concerns, like its effectiveness for higher-level learners, show that there should be more content in the theory to satisfy long-time users. On the other hand, perceived ease of use is slightly higher in Babbel, a language learning application, where users relish the company's systematic lessons to cater for professionals and grammar.

However, there are negative attitudes on perceived ease of use, which will be discussed below: Place navigation difficulties and lack of interface customisation, which are some of the usability issues that have come into light and may act as barriers to adoption by a larger populace. Solving these problems in both apps would also improve user satisfaction, attraction, and continuance.

Stylistic Analysis of Babel Reviews

In the methodological design of the work, the review of Babbel users is determined by analysing specific features of language use, including the tenor, mode, lexicon, and rhetoric of language use as a way of identifying how the users express the nature of their learning in the app. By analysing user engagement with the application, this paper uncovers more complexities of the app with a special focus on the role of content provision and content creation.

Tone and Formality

The overall tone of Babbel's reviews is quite serious and explores the potential of a product in detail, which is probably because users of Babbel are professionals or students who want focused language learning tools. The words that are used by users to describe Babbel are mostly descriptive and accurate. When it comes to describing the lessons and curriculum of this application, people describe it as “comprehensive,” “well-organised”, and “effective”. At the same time, negative feedback may sound rather bureaucratic, complaining about certain features, subscriptions and other aspects based on clearly defined structures, for instance, critiques like "The subscription is too expensive for what it offers," or "The app's interface could be more user-friendly".

Lexical Choices

They controlled a language-associated density of the items that included such words as ‘lessons’, ‘grammar’, ‘structure’, and ‘progress’. Positive words are usually logical words: “usefulness, effectiveness, simplicity, and clarity” are among the most common words used in positive feedback. On the other hand, the negative review is identified by words reflecting discomfort with usability or cost issues, like “costly, restricted, or complex”. This can be ascribed to a user base that seems to only be interested in value, and where Babbel’s proposition as a formal language learning solution fits in well. The following is the visual representation

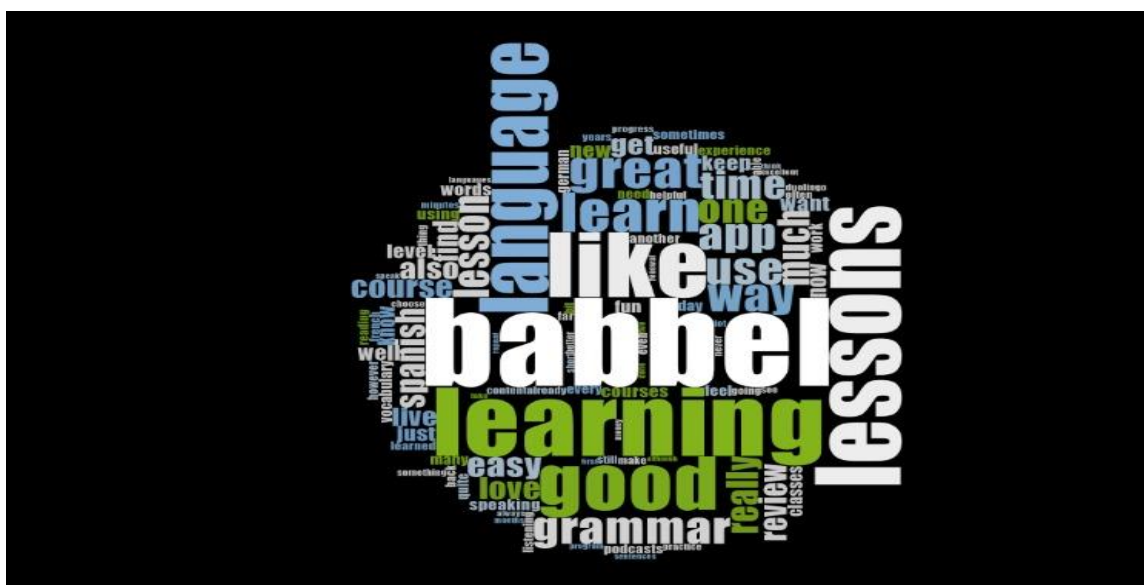


Figure 7: Word Cloud of Babbel Reviews

Rhetorical Patterns

In Babel's review, users tend to logically and systematically present an argument and analyse strengths and weaknesses. Positive feedback usually starts with an enumeration of strengths, for example "The grammar explanations are clear and thorough", and ends with a recommendation for other users: 'I recommend it'. In turn, negative feedback is problem-solution formatted, that is, after describing the problem, people come up with a possible solution, for example, "The app's lessons are good, but the lack of customisation makes it hard to adapt to individual needs". These patterns are mixed up in reviews that focus on the advantages and disadvantages of the app.

Emotional Engagement

Self-acceptance and positive emotions are characteristic of Babel users' reactions in contrast with exaggerated emotions observed in users of other applications, such as Duolingo. On the positive side, people express gratitude, for instance, "This app has been instrumental in helping me learn grammar", but hardly a frenzy of gamified applications. As mentioned in negative formal posts, people are dissatisfied with specific sources of pain, like subscriptions or the lack of interactivity.

Length and Complexity

The stylistic analysis shows that the reviews are more elongated and explanatory. It indicates that the people who use Babel are more committed towards their usage of the product. The second reason is based on the logical complexity of the distinguished highly compound syntactic structures of the sentences and complicated words used, which altogether makes the value propositions stand out for frowning and deep utility to the serious learners who prefer superior depth and richness paramount to the language learning apps.

Considering the stylistic features of the Babel reviews, the target audience is portrayed as appreciative of structure, formality, and educational output. Reviews are most frequently specific, content-wise, they are systematic with a clear structure and language, and users state their opinions formally and coherently. While feedback remains positive concerning design and content, negative feedback raises issues of functionality, versatility, and cost. This pattern is endemic to Babel's positioning as a language learning tool for serious learners and may imply that even more user satisfaction could be achieved through improvements in the interactivity of the application and costs.

Stylistic Analysis of Duolingo Reviews

The Stylistics study of Duolingo's reviews focuses on the language properties of the messages to determine how the application is used. The features identified present contrasting patterns, which correspond to Duolingo's gamified design and attract both low-intellect and high-language-interest audiences.

Tone and Informality

Duolingo is a fun-aided language learning tool; most of the reviews found on the website have a light, informal register. The positive feedback is filled with the increased emotional charge and the use of the words "fun", "addictive", "amazing", etc, which indicate that the investigated app can attract users and permanently involve them in the process by offering entertaining and engaging functions. Negative reviews are as informal as the beloved ones, but they are negative, and the users share their despair over certain flaws, like as "repetitive lessons" or "limited advanced content."

Lexical Choices

A lot of the words used in the Duolingo reviews relate to the advertisement of gamification and simplicity of the application, including “streaks,” “fun,” “game-like”, and “rewards”. Another critique gives good testimonials regarding the app by using good words such as easy, intuitive, and engaging to describe its appearance and use. On the other hand, negative reviews try to describe the app as simple, monotonous, and repetitive terms that depict dissatisfaction with the level of the application’s complexity and capability to fit higher-level learners. This dichotomy comes as no surprise and demonstrates Duolingo’s main attraction to everyday learners and its downsides for intensive learners.

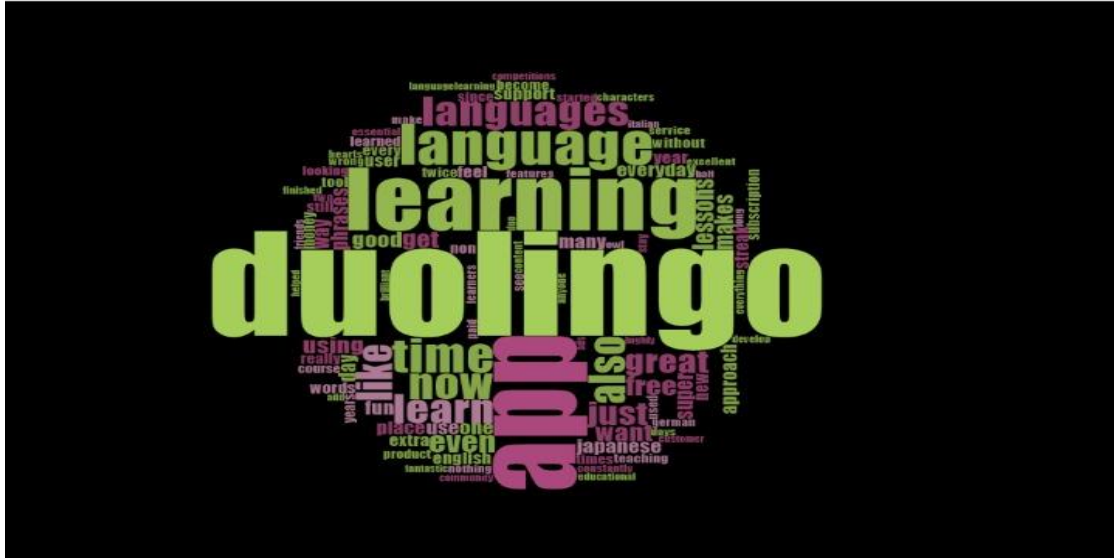


Figure 8: Word Cloud Of Duolingo Reviews

Rhetorical Patterns

The presented reviews are emotion-oriented, and when positive, tend to use a similar set of rhetorical strategies. Starting from the discovery, people often post positive emotions regarding the application and end with an analogy, recommendation, or experience in learning more. On the other hand, the negative comments are fewer and shorter, and the key issue revealed by users has to do with specific problems (e.g., “The lessons are too repetitive,” or “No grammar is taught”). These patterns are, in equal measure, complemented by mixed reviews that, while expressing enthusiasm about engagement, see vices in content thinness or lack of functionality.

Emotional Engagement

Duolingo reviews have a higher level of ‘emotions’, especially the positive ones, as compared to Babbel. Meaningfully, users state their joy and satisfaction with the game elements, adding to motivation and cohesion with retention. Negative comments, too, are based on emotional responses, though they may not be as well-managed as positive remarks; the clients are either dissatisfied or have not met their expectations. This emotional perspective is consistent with the aspect of gamification, of the entire Duolingo model that integrates functional with the emotional perspective of its users.

Length and Complexity

There are fewer of them, and they are not as elaborate as Babel's, which is quite understandable because Duolingo attracts learners who may not spend a lot of time writing comments about the app. Due to the small and simple constructions of the presented reviews as well as non-specialists'

language, the reception of which implies a sign of understanding within the context of a broadly intended clientele, including the young learners and the novices in the language learning process.

Based on the analysis of stylistic features of the Duolingo reviews, it can be stated that its users appreciate simplicity, playfulness, and interactivity. The feedback given is outspoken, with a marked prevalence of emotionally positive comments on fun and simple experiences and negative ones on repetitiveness and lack of more complex material. Most of the reviews are considerably shorter than those for most language-learning apps and programs and lack much of the specialised language associated with professional language learning, indicating that people for whom Duolingo is most appropriate are those who are interested in a light and recreational approach to language learning. To increase its customer base, Duolingo could better address complaints about lessons and provide more comprehensive material for those who are at an advanced level.

Comparative Analysis of Duolingo and Babbel and Discussion

By comparing the sentiment and stylistic analysis of the user reviews for the two applications, it is observed that the users consider and express the two applications very differently, which has to do with the differences in terms of features and target audience. While the research questions are answered using quantitative data, this comparative evaluation ensures that the study benefits from the Appraisal Theory and the Technology Acceptance Model (TAM) to understand the users' attitudes, emotions, perceived usefulness and perceived ease of use concerning both platforms.

Sentiment Distribution and Emotional Engagement

Overall, Duolingo receives mostly positive feedback: 58% of them are moderately positive, and 45% represent very positive ones by the company's focus on the game-like application process. The Appraisal Theory framework shows that users perceive playful learning, and they use emotional language such as 'fun' and 'addicted.' However, 35% of negative feedback can be attributed to negative attitudes resulting from repetitive lessons along with the absence of advanced content significance and, thus, dissatisfaction among the advanced learners. From the TAM analysis point of view, Duolingo stands out for its perceived ease of use since users enjoy the application's easy-to-navigate layout and game elements. Nonetheless, its usefulness is in doubt, even from advanced learners who consider the application suboptimal for language learning.

Regarding the sentiment distribution for Babbel, positive is once more the most common, with 54% having a moderately positive sentiment and 33% having a very positive sentiment due to the company's lesson-based, grammar-focused learning style. According to Appraisal Theory, people express positive sentiments of formality and methodicality about Babbel as they use terms such as 'comprehensive' and 'efficient'. Nonetheless, 20% of the judgments are moderately negative and 19% very negative responses address negative interaction, which often concerns issues of pricing and usability. From a TAM perspective, Babbel has high perceived usefulness, especially for keen students who have specific grammar and professional language learning interests. However, its perceived ease of use is argued to be a disadvantage since users complain of problems regarding the navigation and design of the interface.

Tone and Lexical Choices

Duolingo surveys allow the utilisation of colloquial language, and most of the comments contain effects relating to the level of excitement, such as amazing and boring. This indicates great emotion, especially on the part of dynamic learners who appreciate the game approach and non-formal classes. The component of engagement revealed in the Appraisal Theory can be seen because users tend to interact as if the app is enjoyable or not as they wish. TAM also clarifies this

engagement by stating that basic and fun appeals, the factors that make perceived ease of use, are well enhanced at Duolingo.

The Babbel reviews are the opposite, and while they contain altogether more informal language and more user expression, the terms the users choose are far more descriptive and precise, such as “structured,” “clear,” and “efficient.” These lexical choices also reflect the actual positioning of Babbel as a professional, designed system to engage with learning seriously. Appraisal Theory indicates that users describe graduation in their feedback, which includes such terms as ‘useful but costly.’ The proposed conclusion is that Babbel’s perceived usefulness corresponds to what serious learners regard as a language learning application; the lack of gamification or simpler functionalities hinders its perceived ease of use, especially with novices, those with no technical know-how or those who seem to be drawn to games in the learning process.

Rhetorical Patterns and Length

In many of the Duolingo reviews, the comment authors adhere to an emotional appeal-based format with a direct opinion followed by a specific life experience. Reviews tend to be short and unsophisticated, usually associated with the problems that occurred when using the resource or learning with its help when looking for advanced learning or grammar courses. According to Appraisal Theory, these reviews suggest extreme empathy for users with extremely positive impressions of its engagement or extremely negative impressions of its shortcomings. TAM goes further by saying that while ease of use makes Duolingo prominent, its effectiveness in helping learners with higher proficiency is still wanting.

The language used in Babbel reviews is rather reasonable and systematically built, advantages and disadvantages are described comparatively. Positive feedback highlights such aspects as ordering, organisation of lessons, negative and mixed pricing policy and possibilities for individual customisation; sometimes negative and mixed feedback is followed by suggestions. It is also seen that these are not simple and short commentaries, so there is a view to support Appraisal Theory’s notion of engagement. Consequently, from a TAM perspective, these detailed reviews originate from Babbel’s perceived usefulness, while high usability issues sometimes limit further adoption.

Comparative Insights

Aspect	Duolingo	Babbel
Sentiment Dominance	Positive but polarised; high emotional engagement.	Predominantly positive; fewer mixed reviews.
Tone	Casual, conversational, emotionally charged.	Formal, evaluative, and focused on content structure.
Lexical Choices	Gamification-focused: "fun," "streaks," "rewards."	Education-focused: "grammar," "lessons," "progress."
Emotional Engagement	High, driven by gamification and accessibility.	Moderate; driven by structured and professional content.
Perceived Ease of Use (TAM)	Strong, simple interface and gamified design.	Moderate; navigation and usability could be improved.
Perceived Usefulness (TAM)	Moderate; limited depth for advanced learners.	Strong, structured lessons are highly valued by serious users.
Rhetorical Patterns	Emotion-driven, concise reviews with personal anecdotes.	Logical, detailed, constructive reviews with suggestions.
Length and Complexity	Shorter, simpler, and accessible to casual learners.	Longer, more detailed, and more appealing to serious learners.

It was found that comparing stylistic and sentiment trends between Duolingo and Babbel suggests that the two platforms fulfil different user needs. Duolingo is easy to use and emotionally appealing to practice, but critics have complained about it lacking difficulty and offering advanced content. Babbel, on the other hand, is greatly appreciated for its utility and organised lessons, and is best for serious students, but it is a little difficult to use, and its prices are exorbitant.

Conclusion

This study offers a comparative and sentiment analysis on user feedback of Duolingo and Babbel using Appraisal Theory and the Technology Acceptance Model (TAM). The study shows that Duolingo is effective in catering to casual learners through an application that is enhanced by games and an easy-to-use interface, supported by highly positive customer responses. Nonetheless, there are a great number of complaints connected to the idea that most lessons are rather uninteresting and do not elaborate enough for a more advanced learner; this leads to doubts about the long-term efficiency of the service for dedicated language learners. However, major positive feedback has been noted from users who are serious learners in that the features of Babbel are well-appreciated due to its structured and grammar-inclined modes. Babbel has received significantly lower mixed feedback than Duolingo, which indicates that it may provide a far more coherent experience to its users, although criticisms regarding the app's usability, directions, and subscription services begin to tell us that there is much work to be done in terms of attracting more casual learners.

Stylistic differentiation also holds for the apps' positioning, which emerged from the typology. The different Duolingo reviews, which are usually brief, unstructured and dramatic, are a result of its entertainment and ease of use. On the other hand, Babbel reviews are professional and intricately critical, with good evaluation measures as they target professionals and scholars. These qualitative differences demonstrate how the users phrase their experiences based on the structure and purpose of the created applications.

The use of Appraisal Theory shows that the attitude and emotions of users are distinct between both, and Duolingo has garnered intense feelings: positive or negative. Babbel maintains a constant positive reception from its target audience consistently. The findings of the current study from the TAM analysis also showed that Duolingo received high optimism in perceived ease to use the learning application but was relatively low in perceived usefulness of the application particularly for advanced learning while Babbel received a high rating in perceived usefulness of the application but perceived low ease of use and accessibility.

In summary, this work finds that while both apps have their places in the language learning market, they are fulfilling different roles. To improve usability, Babbel needs to work on the interface and try implementing new types of subscriptions rather than monthly ones. Duolingo, in turn, should improve the content depth and the number of repetitions in lessons. If these limitations are eliminated, both apps will be more appealing and useful to the user base and can maintain the engagement and satisfaction level at par.

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