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Introduction

Consumption of foreign media is a major reason many people decide to start learning a foreign language, and this is especially true for East Asian languages such as Korean and Japanese. As there are hundreds of dramas from the corresponding countries of these languages currently being streamed on Rakuten Viki, it would be of particular interest to Viki to explore the integration of language learning with its already existing translation crowdsourcing system, which would fit in well with one of its major goals to "make language learning more fun by crowdsourcing translations for the subtitles of TV shows, movies and videos."[1] Moving forward with such a venture would increase the motivation of its existing community as well as attract a broader audience of language learners eager to use TV shows as a medium for their learning.

Viki has actually already begun incorporating such language learning tools with the launch of its "Learn Mode" in 2017. Learn Mode is a feature that can be turned on for certain Korean, Japanese, and Chinese dramas, and by utilizing the tool, users are able to view subtitles in both the source language and preferred subtitle language simultaneously on the screen. By hovering over and clicking words in the source text, the word's pronunciation and meaning will be displayed on-screen, as shown below.

Figure 1: Example of Learn Mode being used in English on a J-drama.

Learn Mode+

Learn Mode is a very useful resource for language learners to be able to easily look up and learn new words in their language of study. However, the tool is somewhat limited in facilitating the *learning* of a language, as it only targets vocabulary, not grammar. This is perhaps because it is much easier from a programming standpoint to identify specific words in a script, whereas grammatical patterns are much more nuanced. Thus, if grammar were to be implemented into the tool, a machine may be able to carry out the work to an extent, but a human element would inevitably be required. I propose that through the utilization of crowdsourcing, Viki's Learn Mode can be expanded in this way to include learning grammar, a feature that I will refer to as "Learn Mode+" throughout the rest of this document. Learn Mode+ would encompass the following:

- Highlighting of grammar patterns in subtitles for both the source language and the user's chosen language
- Customizable settings to show only certain grammar patterns based on the user's language level
- List at the end of each episode displaying all instances of grammar patterns that appeared at the user's language level
- Ability to search for clips across all dramas showing a specific grammar pattern

Prioritization and Preparation

Before crowdsourcing for Learn Mode+ can occur, the following should be considered:

- Prioritization of efforts toward languages that Viki offers the most content in (Korean is by far the most prevalent, followed by Mandarin Chinese, followed by Japanese).
- Creating a list of grammar patterns for each language Learn Mode+ can be used in. As mentioned earlier, one feature of Learn Mode+ is customizable settings for showing only certain grammar patterns based on the user's language level, and having a list of grammar patterns will make it so they can be roughly sorted into language level. One method recommended to accomplish this is by utilizing grammar lists for language proficiency tests; for example, the Japanese Language Proficiency Test (JLPT) has five distinct levels ranging from beginner to advanced, each with its own specific set of grammar that is tested.[2] Similar tests also exist for Korean (TOPIK) and Mandarin Chinese (HSK).

Crowdsourcing Process

The main crowdsourcing process would look as in the diagram below. Note that while the tagging of segments would mainly be done by the crowd, an extra alternate first step has been added to account for the possibility that a machine could be programmed to automatically tag

some segments (in cases where it is easy to do so). The rest of the process would be the same regardless of whether the initial tagging was performed by a human or a machine.
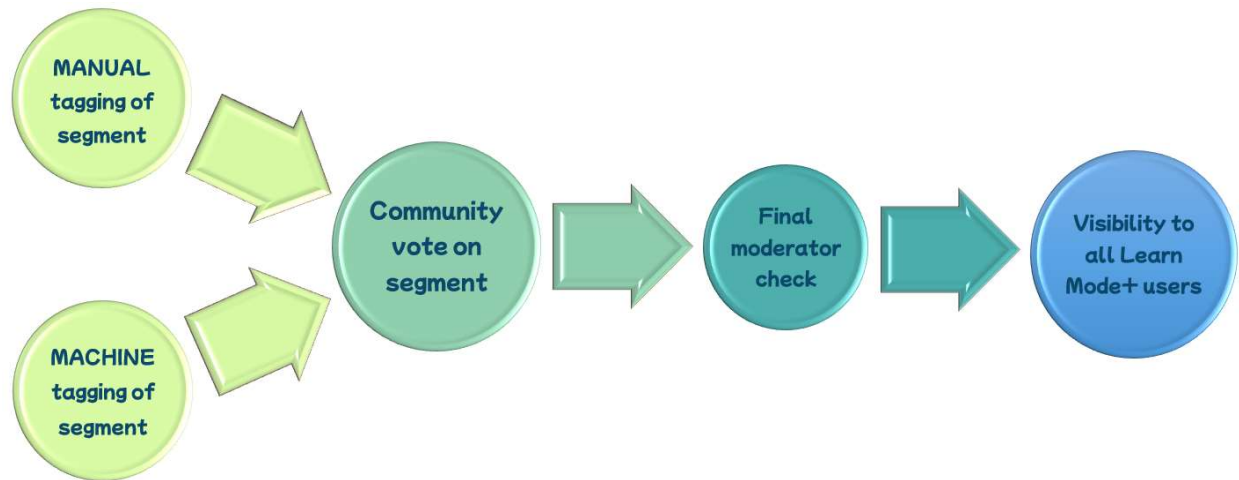

Figure 2: Basic outline of Learn Mode+ crowdsourcing process.

Some notes on each step:

Tagging of Segments

Viki's existing subtitling tool already allows for volunteers to perform segmenting, so only minor adjustments would need to be made to the tool to carry out this step.

- Volunteer clips the relevant segment with the grammar pattern of interest based on prepared guidelines
- Volunteer highlights the part of the subtitles in the source language with the relevant pattern, then selects the corresponding grammar pattern from a list so the subtitling tool can link the clip with the specific pattern in its system.
- Optionally, if subtitles for the user's chosen language have not been written yet, the volunteer may also add the subtitles at this time.
- Volunteer submits the segment for review after completion of the above steps.

Community Vote

- Volunteers that have indicated they want to contribute would be able to review user-tagged segments while watching shows and vote with a thumbs up/down on a) accuracy (whether the clip actually demonstrates the grammar pattern indicated) and b) usefulness (not all instances of a grammar pattern are good examples for language learning).
- Volunteers may suggest an edit to the segment (to either segment length or which part of the subtitles is highlighted), and these suggestions will be viewable to volunteers for voting on as well.
- If volunteers are interested in reviewing segments more efficiently without having to click into different shows to watch, a separate page may be created that congregates

submitted segments in a way that makes them easy to view one after another (for example, a user can click on a specific grammar pattern to see all segments currently under review for that pattern).

Final Moderator Check

Once a segment receives enough positive votes, it will go to a moderator (fluent in the source language) for a final check.

Visibility to All Learn Mode+ Users

After approving by the moderator, the segment will be "locked" and all viewers, regardless of whether they are volunteers, will be able to view the highlighted segment upon turning on Learn Mode+.

Maintaining Quantity (Motivation)

Perhaps the biggest motivating factor for contributing to Learn Mode+ is the desire to learn a foreign language. This can be quite powerful in increasing crowdsourcing quantity, as demonstrated by Duolingo, a company that successfully combined the crowdsourcing of translation of sentences on the Internet with a language learning platform. As someone who has been a Japanese learner and educator myself, I can attest to the fact that the process of searching for a grammar pattern in the context of a TV show itself is a helpful learning exercise, as I experienced this when I created a Twitter[3] and YouTube channel[4] in 2021 as an educational resource utilizing short clips from Japanese TV shows to demonstrate specific grammar patterns. By crowdsourcing such an effort for its dramas, Viki could turn Learn Mode into a powerful learning feature that not only motivates the current volunteer community to contribute, but also bring in a potentially much broader audience of language learners.

Other steps that could be taken to increase motivation include:
- Gamification of contributions through integration with Viki's existing system.
    - Badges for tagging a certain number of segments
    - Badges for when a volunteer also contributes subtitles to their tagged segment (i.e. "You even contributed subtitles while tagging your segment! Thank you!")
    - Tie-in with Viki's current "Perks" system, featuring rewards such as free VikiPass (ability to watch shows ad-free, access to additional exclusive content), entry into a raffle for quarterly prizes, etc. in exchange for a certain number of contributions
- Email or other notification when a volunteer's tagged segments have been approved to be visible to everyone on Learn Mode+ (i.e. "You recently tagged a segment on *x* show for *y* grammar pattern and it is now live on Learn Mode+. Go check it out!"). Being able to see the results of their work is likely to increase a volunteer's motivation to do more.

- Expansion of Viki's current forums to accommodate a larger language learning community so that users can easily bond over through Learn Mode+. For example, dedicating forum spaces to a) discuss contributing to Learn Mode+ as a volunteer and b) discuss language learning among users using Learn Mode+ to learn vocab and grammar.
- Partnership with another language learning platform to draw in a bigger volunteer audience that is motivated to contribute. For example, a partnership with Duolingo or an organization with similar goals as Viki could facilitate integration of some of Learn Mode+'s features with language lessons in the partnered platform, incentivizing users to contribute to their own learning through contributing to Learn Mode+.

Maintaining Quality

The following steps can be taken to ensure quality is maintained in the crowdsourcing for Learn Mode+:

- Brief video guidelines for the tagging process so volunteers are properly trained.
  - Examples: maximum segment length (i.e. less than 20 seconds), advice on making sure segment includes appropriate context rather just than a couple words
- Language moderators (trusted user of community, or perhaps even an employee if budget allows) for each language offered on Learn Mode+. This would add an extra review step for quality assurance as well as create structure in the overall process in case any volunteers attempt to act maliciously.
- Light vetting process for volunteers, since at least some proficiency in the source language of the show is required. A couple possible options for this could be:
  - Limiting participation to subtitlers that have reached a certain number of contributions already
  - Guiding volunteers to fill out a quick application to contribute to Learn Mode+ that gets reviewed by a language moderator (similar to the process already done for applying to be a subtitler on Viki subtitling teams)
  - Allowing participation from trusted users on a partner site (i.e. assuming a hypothetical Duolingo partnership as mentioned earlier, users of Duolingo would be able to contribute if they are at a certain language proficiency)

Costs

Most of the costs for Learn Mode+ would lie in the preparation phase, where resources must be dedicated to the software engineering and localization of Learn Mode+ features. However, since a lot of these steps draw upon already existing features on Viki (subtitling tool, video guidelines, reward system, Learn Mode, etc), this would help drive down development costs. Additional employees may be necessary for the maintenance of the software engineering or perhaps as long-term managers/moderators who oversee Learn Mode+.

These costs would mainly be offset by an increase in ad revenue and paid subscriptions from drawing a larger audience of language learners to Viki. Some features of Learn Mode+ (such as ability to search tagged segments for all dramas by grammar pattern) could also be made premium to bring in additional revenue.

Anticipated Results

The main results expected from this crowdsourcing effort include:

- Tagging of thousands of segments with grammatical patterns across Viki's content library for Korean, Japanese, and Chinese shows (which are the languages the current Learn Mode is supported in), with expansion to other languages in the future.
- Expansion of Viki's volunteer community, particularly from language learners.
- Rise in motivation for subtitling community from overlap with Learn Mode+ volunteers, perhaps leading to increased motivation for subtitling into less popular languages and motivation to older shows that have remained unsubtitled due to lack of popularity.
- Increase in overall users of Viki, leading to increase in paid VikiPass subscriptions.
- Increase in global brand awareness for Viki, both as a streaming platform and a language learning platform.

Due to uncertainty in figures such as the exact number of volunteers that would participate in Learn Mode+ crowdsourcing and the additional traffic Learn Mode+ would bring in to Viki, a pilot program for the feature is recommended in the form of a "Tag-a-thon." Similar to a "Translate-a-thon," where volunteers gather during a limited period of time to translate content together, a "Tag-a-thon" would set a time period (perhaps a couple days) where volunteers tag segments for Learn Mode+ together. The target content could be for only a limited selection of dramas in a single language to gauge overall activity and feedback, and based on these results, the feature could be expanded accordingly to other dramas and languages to be launched in full.

References

[1] Smith, Sean. "How Does Viki Break down Language and Cultural Barriers?" Rakuten Viki, 15 July 2020, https://support.viki.com/hc/en-us/articles/201897080-How-does-Viki-break-down-language-and-cultural-barriers-.
[2] "Learn Japanese Grammar." Japanesetest4you, https://japanesetest4you.com/flashcard/category/learn-japanese-grammar/. Accessed 21 Jan. 2022.
[3] *JLPT Japanese Learning*. https://twitter.com/jlptthrutv. Accessed 21 Jan. 2022.
[4] *JLPT Japanese Learning*. https://www.youtube.com/channel/UCth8eyQs6sVjuv7cqdgJcrw. Accessed 21 Jan. 2022.