

Incentivizing the ASL-STEM Forum

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ABSTRACT

The ASL-STEM Forum is a web forum which allows people who know American Sign Language (ASL), to contribute signs in the fields of STEM (Science, Technology, Engineering, and Mathematics). A key problem is increasing participation and contributions to the forum. To solve this problem, we introduced personal smart notifications, based on user profiles, which encourage users to contribute to the forum by adding new signs for STEM terms or commenting on existing signs. Since there might be a chance that a member will be familiar with the author of a topic or sign, they might be more inclined to contribute. In future work, a user study will follow to evaluate whether personal smart notifications will increase contributions to the ASL-STEM forum.

Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation]: User Interfaces – *User-centered design*; K.4.2 [Social Issues]: Assistive technologies for persons with disabilities.

General Terms

Design, Human Factors

Keywords

American Sign Language, Deaf, Hard of Hearing, STEM, Online community, incentives, personalization

1. INTRODUCTION

People from the Deaf and Hard of Hearing community participate in STEM fields for their schooling and careers. Like concepts in these fields, signs in ASL can be created or changed at a rapid pace. The ASL-STEM Forum was developed to cater to this small and widely dispersed group of people. The ASL-STEM Forum is a web forum which allows people who know ASL to contribute signs, terms, comments, and ratings in the fields of STEM (<http://aslstem.cs.washington.edu/>) [1, 2]. There are currently 175 members and 1300 terms. Out of these terms, there are only 450 which have signs that range from “Biochemistry” to “Human Computer Interaction”.

Since the Deaf and Hard of Hearing community is smaller, it can

be more difficult to reach critical mass on the forum. Various methods have worked for more mainstream sites such as Wikipedia [3] and MovieLens [4, 6] including intelligent tasks and utilizing the community to increase participation. We hope these achievements can transfer into a smaller niche community such as Deaf and Hard of Hearing people in the STEM fields.

We implemented personal smart notifications, which educate members of the forum of a topic or sign of interest, highlight who created the topic or sign, and ask them to add a sign or comment, respectively. The topic is determined by the member’s interests on their personal profile.

We will evaluate the usefulness of these notifications, and if it enhances their experience with the ASL-STEM Forum. We are particularly interested to see if creating a stronger sense of community, or adding the username of the original author to the notification, will encourage members to make more contributions and more often.

2. RELATED WORK

Our work on the ASL-STEM Forum is the first to utilize personal smart notifications to incentivize online collaboration with Deaf and Hard of Hearing individuals. However, some work has touched upon related topics. Cosley et al. [3] introduced SuggestBot, which showed that intelligent suggestions increase participation on Wikipedia. In addition, Ludford et al. [6] introduced that people collaborate more when shown personalized uniqueness information. However, they do not show the impact of introducing another user in notification. Harper et al. showed that including the username in the notification does increase activity. We wish to see if smart notifications will work in the same way for the Deaf community.

The ASL-STEM is not considered a dictionary; there are many differing attributes from traditional online dictionaries that are conducive to online collaboration. One example is the like NTID RIT Sign Lexicon [5] which is used for science. A forum is a dynamic growing version of a dictionary, meaning signs can be entered based on people’s needs and there can never be too much information. A dictionary moves at a much slower pace, and if a popular term is introduced there can be delays of up to years before it is introduced [2]. Unlike a dictionary in which employers are experts in the language, contributions in a forum come from the users.

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Table 1. Differences between a form and a dictionary.

Forum	Dictionary
Dynamic	Intermittent revisions
Unlimited size	Limited size
No delay entering new terms	Delay entering new terms
Language users	Experts

3. CURRENT STATE OF THE FORUM

The ASL-STEM Forum view pattern highlights that there are important terms many people use often, and obscure terms which are viewed less often (see Figure 1). There are a total of 20,237 views, based on the data acquired on August 10, 2011. Highly viewed videos are fulfilling a larger audience, for example, the sign “Curly Braces” is the most popular with 1,493 views. However, there are many signs that are viewed less often, with the median number of sign views at 9. Some example signs with the median amount of views include “Food Chain”, “Magnification”, and “Bioaccumulation”. These signs don’t need to be known by everyone, but will be very important as students and professionals get more specialized in their occupations.

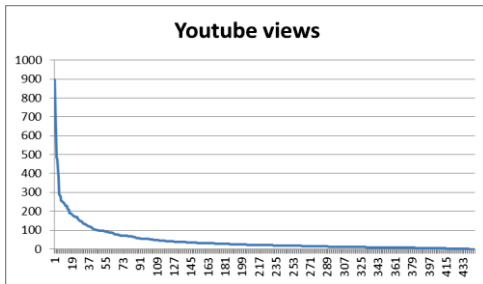


Figure 1. Views per video in decreasing order.

4. PERSONAL SMART NOTIFICATIONS

We have implemented notifications which either propose adding a sign to a topic, or adding a comment to a sign. We will determine the topic to display upon login based on their listed interests in their personal profile. They are personal since the author of the topic or sign will be introduced in the message. Since the Deaf and Hard of Hearing community is cohesive in many ways, we anticipate people will be very receptive to the personal touch in the notification. An example personal smart notification would have a message containing a link to the author’s history, the sign and/or topic, and a link directing them to the task (see Figure 2).

5. POTENTIAL BENEFITS

With the addition of the personal smart notifications, we anticipate participants will be more involved. Contributions could come in the form of completing signs for a particular user they know and are familiar with, or starting a discussion via comments about a particular sign. Members will also have an easier time contributing to the ASL-STEM Forum, since they will get suggestions to contribute to areas they find more interesting. If members are more willing to contribute to the forum, then Deaf and Hard of Hearing individuals will have more resources when looking for signs in STEM.

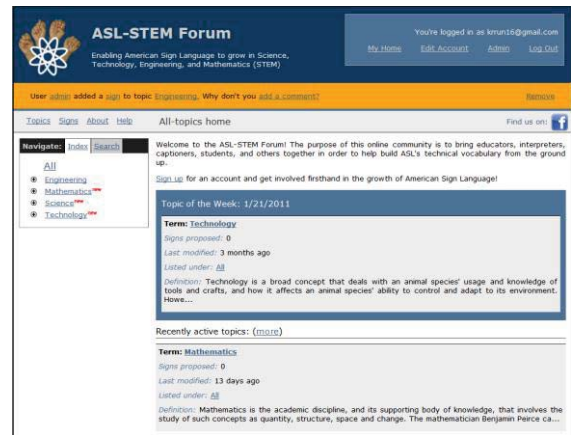


Figure 2. ASL-STEM Forum with a notification: “User admin added a sign to topic Engineering. Why don’t you add a comment?”

6. CONCLUSION AND FUTURE WORK

We plan on evaluating the personal notification bars on approximately 30 current and new members in the Deaf and Hard of Hearing community. We will request them to add three new signs per week for 2-3 weeks, and will analyze their pattern of usage. We hope to investigate whether the suggestions that contain usernames will encourage more activity and why it may or may not work. We plan to update the ASL-STEM Forum if our proposal is a success.

7. ACKNOWLEDGMENTS

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