LIM App: Reflecting on Audience Feedback for Improving Presentation Skills

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Abstract. In order to successfully give a lecture or do a presentation in a conference, presenters need certain skills as well as previous preparation. In such scenarios, reflective learning offers a great potential to improve professional skills and presenter's performance by relying on data captured during the presentation. For this purpose, we developed the Live Interest Meter (LIM App) which allows capturing, aggregating and visualizing live feedback from the audience. After developing the first prototype, testing it and conducting a user study, we developed the second prototype presented in this paper. This further development made emphasis on the recalling and revisiting of past experiences by exploring the collected data. We conducted the evaluation of the LIM App with three university lectures. Our evaluation showed positive results regarding the capturing and sharing of feedback to improve presentation skills. Whilst the LIM App guided the lecturers to reflect and to remember their presentations better, some time and advice to get accustomed to using it is still needed so that it is optimally integrated in their presentations.

Keywords: Reflective Learning, Live feedback, Tool, Quantified Self.

1 Introduction

Lectures and conferences are main daily activities in several professional fields, like teaching, research or business. The presenter needs certain skills as well as previous preparation in order to successfully address her audience. Additionally, it becomes more challenging when the size of the audience increases. In such scenarios, reflective learning, i.e., learning from own experiences, offers a great potential to improve professional skills and presenter's performance by relying on data captured during the lectures or presentations [8].

There are several approaches related to capturing data in education (e.g. [4,5,6,9]) with the purpose of increasing the interaction with the audience, but none of them focus on using the captured data to review the presenter's performance and improve by reflecting on it. Presenters can only perceive their performance from their own perspective, and having information about the perspective of the audience may offer potential for learning and improvement. This audience's perspective can be captured in form of feedback about the presentation (Is the lecture difficult or easy to follow? Is the presentation too fast or too slow?).

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To address these issues, we developed the Live Interest Meter App (LIM App) [7], which allows to track and visualize feedback from the audience to support reflective learning. Based on the conclusion of our previous work, this new version improves existing features and adds new ones, especially for the support of recalling and revisiting past experiences. Following the model described in [8], the LIM App concretizes an example of a Quantified Self (QS) application to support reflective learning, with the aim of guiding learners to improve their presentation skills and performance when addressing an audience. We present in this paper the second prototype of the LIM App and the evaluation we conducted in three university lectures.

In the following, we will present a review of related work (Section 2), the Live Interest Meter App (Section 3) and the conducted evaluation (Section 4).

2 Related Work

Audience Response Systems (ARS), also known as clickers [4,6,9], enable lecturers in a large lecture class to instantaneously collect student responses to a posted question, generally multiple choice [3]. These systems generally aim at improving student outcomes (e.g. exam scores or passing rates), student comprehension, and learning as well as student attendance and interest on the course. Among the commercial clickers we can find ShakeSpeak[1], a plug-in for MS PowerPoint that allows users to insert questions in the slides. Socrative[2] is also an online mobile student response system to engage classrooms through a series of educational exercises and games. There are also some approaches that explore all way communication through micro blogging [1,5] to support a more active learning experience in spite of the size and layout of large lecture halls.

Apart from the above mentioned clickers, there are other projects to support real-time feedback during lectures. NUKATH [2] was a project aiming to develop and assess the usage of notebooks in academia. Currently, the NUKATH tool is called nuKIT[3] and serves as a polling service during the lecture, also allowing to give feedback about the speed of the lecturer. WIL/MA Toolkit [10] was developed to facilitate interaction and a bidirectional and synchronous communication between lecturer and students. Another example is GoSoapBox[4], a commercial classroom response system that aims at enhancing students engagement. It has a confusion barometer, social Q&A to post a question at any point during the lecture, discussions that the instructor suggests, anonymised polls and quizzes.

Most of the work about clickers and feedback tools explores and focuses on giving a benefit to students, and are tightly related to the lectures' content and the knowledge they acquire, being limited to polling only during the lecture in many cases. This is associated to the fact that their main goal is to improve

[1] ShakeSpeak, `www.shakespeak.com`
[2] Socrative, `www.socrative.com`
[3] nuKIT: KIT App für Live-Abstimmung und -Feedback im Hörsaal, `http://elearning.studium.kit.edu/179.php`
[4] GoSoapBox, `www.gosoapbox.com`

the learning process of the students, while our work is focused on improving the learning of the lecturer in her professional activity. Therefore, we consider the lecturer as the center of the scenario and focus on the improvement of her presentation skills and performance with the use of the LIM App. In this case, students play a very important role, as they are the ones who provide feedback that serves for the reflection process and therefore they also have to perceive a benefit on the tool. For this purpose, the feedback meter function was enriched with other features that support the lecture, like polls and questions, and are intended to improve the lecture itself, but also to add context to the feedback given to the lecturer.

3 Live Interest Meter App

The second LIM App prototype focused on supporting the revisiting and recalling of past lectures. It was developed as a web application to facilititate the access to the captured data from many devices. The scenario that was considered to design the LIM App involves a person addressing a large audience, e.g. in a lecture or a conference. In this situation, three use cases can be defined. Firstly, a presenter can use the application to gather feedback (a) which can be evaluated and learned from during the presentation. Having the role of an audience member, the user can give feedback (b) during the presentation and, while doing that, improve own attitude, attention and concentration. Lastly, after the presentation, the presenter can evaluate (c) and reflect on the gathered data.

The core component of the LIM App is the meter, which has one dimension and two captions (up and down) and allows to send feedback to the presenter. Before starting, the presenter defines a quantifiable aspect of the presentation to be tracked (e.g., comprehension or speech speed) as well as the suitable color scheme for the meter (blended colours of traffic lights or blue gradient). The presenter can see a dashboard (see Fig. 1) displaying the meter with the current aggregated value, the number of currently active participants, a countdown timer, a notification area and a quick preview table of polls suggested by the audience. The LIM App also offers two additional features to improve their interaction and contextualize the feedback captured with the meter: anonymous questions to the presenter with collaborative voting and polls with several options. Finally, the audience can also send anonymous comments related to the feedback of the meter.

The audience dashboard shows the aggregated live group feedback in an evolution timeline, which displays the personal meter value, group's minimal, maximal and average values in any particular point in time (x-axis) during the presentation. Also displayed in the evolution graph are marked topics, key points during the presentation that can be entered by users in the audience.

To facilitate the revisiting of past experiences, the enrichment and presentation of the gathered data is needed. Users can go to the My events page and explore the reports of their presentations, including the meter feedback, polls, questions and written feedback comments (see Fig. 2).

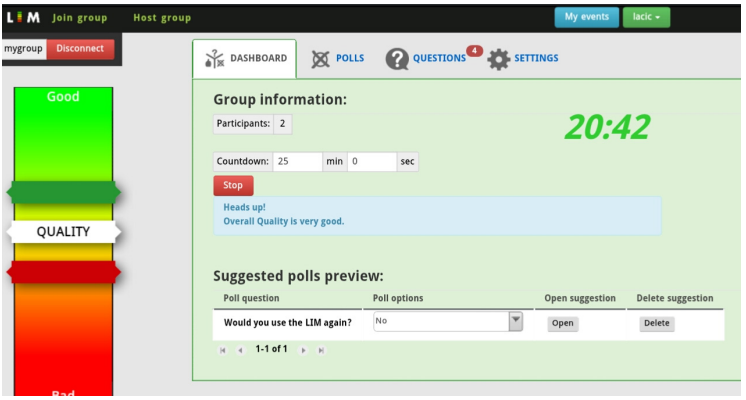

Fig. 1. Dashboard as seen by the presenter during the lecture or presentation

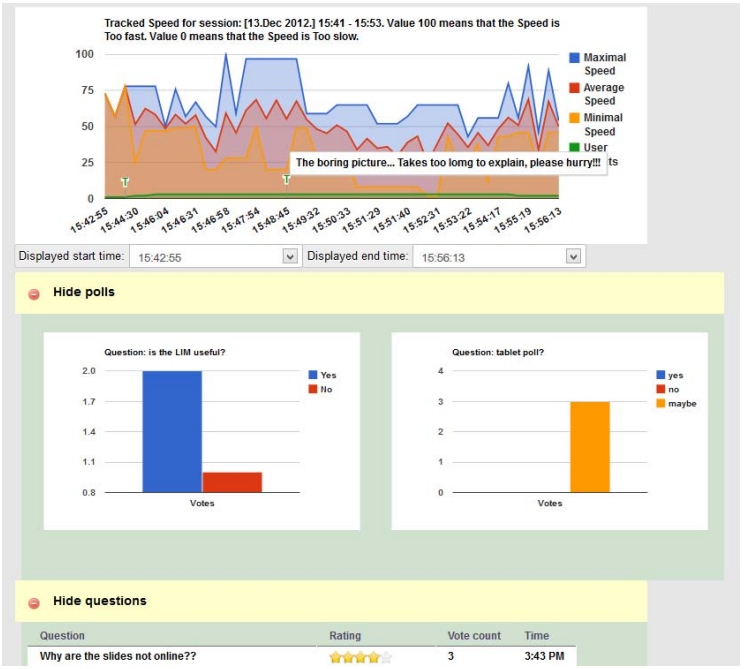

Fig. 2. Report of a presentation held by a lecturer, showing (i) the feedback timeline with the number of active participants, (ii) the results of asked polls and (iii) the posed questions with votes

4 Evaluation

The LIM App was tested and evaluated in three different lectures (see Table 1). The main lecture (Group M) was using the LIM App during three consecutive

weeks. The additional two lectures used it only in one session: Group S had a highly active and small audience whereas Group L had a large audience with much less student activity.

Table 1. Description of the three lectures participating in the evaluation

Group	Sessions	Participants[5]	Degree	Field	Tracked aspects
S	1	11/13	Masters	Mathematics	Speed,
M	3	18/19	Bachelor	Computer Science	Speed, Comprehension
L	1	15/50	Bachelor	Mgmt. and Economics	Quality

The questionnaire addressed four main topics: features of the LIM App, level of participation, thoughts about learning by reflection, and outcomes and work assessment using the LIM App. One researcher of the LIM team was present at the lectures to assess the presenter and students as well as to follow the course of the evaluation. On average the LIM App was used for 83 minutes. The polling function was only used by the presenters in Group M and L. Every presenter used the question functionality at least once in their lecture and there were 17 questions in the lecture with big audience (L).

One presenter agreed strongly with the LIM App helping her to reflect on experiences from work. On the statement that the LIM App has helped by providing information relevant for the decision to reflect one presenter did not agree (Group S), but the other two did. The same two presenters agreed that the LIM App helped them to collect information relevant to reconstruct work experiences as well as to actually remember and reconstruct their lectures. They also agreed that relevant content is provided for the reflection to take place, where the presenter from Group S remained neutral. Allowing the audience members to send general feedback has proved to be a great support for reflection. Related to the main goal of using the LIM App, all three presenters agreed that it is important to improve their presentation skills. In the case of Group M, the lecturer stated that he would use it regularly as it allows the comparison of different teaching strategies. In Group L, it was not clear for the lecturer if the LIM App had distracted the students. As for Group S, the answer was negative, being affected by the high interaction already existing in this group.

In order to be motivated to give their feedback, members of the audience should also perceive a benefit. Therefore, our evaluation also delivered insights about how they could improve their learning experiences. The results from their perspective were overall positive. Some students stated that (1) the LIM App is fun, (2) better than the usual way of giving feedback, (3) provides a possibility to participate personally in the lecture, (4) allows anonymous questions and feedback and (5) with it, the lecturer is able to adapt to the needs of the students.

[5] Number of valid responses / Total number of students in the lecture.

5 Conclusion

In this paper, it was shown with the developed Live Interest Meter application (LIM App) how learning by reflection can be supported with a Quantified Self tool, which allows quantifying and tracking feedback from the audience. In accordance to the analysis of the questionnaires, reflection took place by the users who used the LIM App most during and after the presentation. A key factor in collecting data for reflection is the presenter herself and how she engages the audience to participate and how she integrates the LIM App in the lecture. In order to optimally achieve this, a brief training is needed. Taking the results into consideration, it is clear that the target area for the LIM App are indeed presentations with a large audience number, and little or no student - lecturer interaction. Future work will include a longer evaluation at larger scale.

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