Reception by members of the audience of the information presented during Professional Communication and Academic conferences in Virtual Worlds

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Abstract - This paper deals with the use of Virtual Worlds as a Conference Communication tool and the reception by members of the audience, of the information presented during these Professional Communication meetings. Because of their ability to allow time and cost effective participation of professionals or academics from many countries, Virtual worlds are often used as Social Professional Communication spaces for Academic or Professional Conferences [1]. Yet there is a lack of literature providing insight as to the way members of the audience receive these presentations.

We captured data at a three days academic conference that took place in a virtual world and focused on the comparison between, on one hand, conference speeches and content of visual powerpoint presentations used in the virtual world and on the other hand, the reception of this content by the audience, captured through their chat or group chat exchanges in parallel to the conference presentations. Our findings identify 6 phases describing what is really perceived and shared regarding the delivery of presentation content.

Index Terms – Virtual Worlds conferences – reception – digital backchannels – social exchanges

INTRODUCTION

Travelling long distances to attend face to face professional and academic conferences is important for scholars as it enables them to meet others who share common interests [2]. Yet, the types of formal presentations that take place in this kind of events present a challenge that has long been discussed [3][4][5][6]: there is a single focus of attention on the presenter, with very little interaction from the audience due to the formal layout of the setting [6]. As a result, very few questions are asked and there is a lack of peer feedback amongst or by the audience, often due to the size and formal climate of the setting [5][6].

Nowadays, microblogging, defined by Templeton [7] as "*a small scale form of blogging, generally made up of short succinct messages, used by both consumers and businesses*" to share information and carry-on conversations, are increasingly used in conferences as digital "backchannels" such as those defined by Ynge [8] as "*non-verbal, real-time communication, which does not interrupt a presenter or event*". They are extremely useful for the fast exchanges of thoughts, ideas and information [9] and enable to address the lack of interaction and feedback, by providing an irregular or unofficial means of communication [10]. The most popular microblogging tool is Twitter, created in 2006. It enables its users to express themselves through posts limited to 140 characters.

In recent years, three dimensional (3D) virtual environments such as Second Life have provided a platform for virtual conferences, changing the way people interact and learn [1][11] and there has been an increasing interest in the possibility of integrating science communication and networking with this type of technology, some arguing that virtual conferences would be cheaper to organize and to attend and would make it available for a larger audience at a lower cost [12]. Research shows that interactions with a 3D environment turn virtual conferences into truly engaging experiences as people mentally perceive virtual places very similarly to the way they perceive non-virtual places [13].

Second Life (SL) is one of the best known virtual worlds (VW). It was created in 2003 by Linden Labs. In this 3D VW, users are represented by virtual selves, called avatars, that they create from a range of options

which allow them to generate a unique visual identity through which they interact with other avatars and the virtual environment [14]. SL provides a wide range of interaction tools such as various synchronous means of written and oral communication like chat, instant messaging (IM), group chat, voice chat and voice messaging, or various asynchronous means like group notices, notecards, textures and IM to emails [15]. SL also provides the possibility of projecting slides or video clips to an audience [16].

In a virtual conference, presenters would typically project their slides and / or videos and use the voice chat channel to present their speech. Thus, the other available synchronous communication tools provide a sort of "built-in" digital backchannel through which members of the audience can interact amongst themselves or with the presenter, providing the necessary peer feedback.

Research has already been undertaken on the use of digital backchannels such as Twitter, as a communication tool in general [17][18], in classroom settings [19][5][20], in the commercial sector [21][22] as well as in academic conferences [23] or in online conferences [24]. It has consistently shown that digital backchannels are a valuable way for active participation [25], although some negatives such as distraction, disrespectful content and creating cliques amongst participants, have also been identified [26][10]. However, there has been very little research on the use of built-in communication backchannels in 3D VW, during professional and academic communication conferences. In addition, previous research focused on the use of communication backchannels, without addressing reception of the presentation content by the audience.

This paper aims at analyzing and attempting to understand how presentations are received by the audience in virtual academic and professional conferences taking place in 3D VW. In the context of communication theory: "*who says what to whom, with what effects?*" [27], this research will focus on the "*with what effects*" part.

The study compares, on one hand, conference speeches and content of visual powerpoint presentations used in the VW and on the other hand, the reception of this content by the audience, captured through their exchanges, in parallel to the conference presentations, on the chat built-in communication backchannel. The data corpus used for this research was collected during a three days academic conference that took place in the VW of Second Life in March 2012.

METHODOLOGY

Literature related to collecting and analyzing data in the specific field of VW is still rare. To get a better understanding of reception of information during Professional and Academic Conferences in VW, we therefore had to construct our own methodological process, relying on the discovery approach [28][15]. We opted for a participant observation method [29][30]. An academic virtual conference was selected, based on the criteria that it was an international, virtual, high-level conference, gathering academics and professionals, and including all the components that are usually met in physical professional or academic conferences: paper presentations, round tables and workshops, as well as an award ceremony. The conference was themed on the use of VW for education purposes. It took place in the VW of Second Life during three days in March 2012. A member of the research team participated and collected all the data used for the analysis required for this research.

Further on, we wondered if the same type of informal and formal exchanges takes place amongst members of the audience in real life Professional and Academic Conferences. The closest communication channel we could think of is digital backchannels. Yet, as comparison studies of communication between members of the audience at virtual and real life Professional and Academic Conferences do not exist, we decided to focus first on the reception of information delivered only within virtual Conferences. Possible comparisons will be mentioned in the final sections of this paper.

Visual and written data was collected during three days. The participating researcher took field notes during the conference, using an adapted observation grid. Conference participants, in form of avatars, were filmed during their official presentations. Chat exchanges that took place during these presentations were captured through chat logs.

Because conferences in virtual worlds cater to participants located in many countries, where internet connection speed and computer equipment quality can vary a lot, it can often occur that some attendees are not able to hear presenters' voice and therefore, in most cases, presentations in virtual Conferences will include in local chat, a written transcript of the presenters' speech. Therefore, our data included these transcripts that accompanied the Powerpoint presentations, as well as conversations in local chat, that took place amongst members of the audience during the presentation. This enabled us to, retroactively, assess whether conversations were related to the speeches or not.

During the roundtables or workshops, the sessions were less formalized and relied much more on interactivity amongst members of the panels or between the presenters and the audience, all captured through chat logs. Lastly, the award ceremony included applauses and comments that could also all be captured through chat logs.

A socio-economic approach, based on discourse analysis [31][32], content analysis [33][34] and visual posture analysis [35][36] served us during our analysis phase. Chats were analyzed to get a better understanding of what is really discussed during the virtual presentations

or informal events of a Conference and how these sessions are received by the audience.

To control our data, we used a word counting application [15]. Therefore, all text files data collected during the virtual Conferences were run through this application that recognized the contents and counted the frequencies of words. The data corpus included a 208 pages file totaling 2291 backchannel comments. Validation of results was ensured through cross member check during the whole analysis process.

FINDINGS

When attending academic conferences in real life, participants have to follow specific social codes such as "listen respectfully to the presenter", "don't talk to your neighbor during the presentation" and "don't express strong critiques". These all contribute to the challenges of presentations in formal settings, that we highlighted in the previous sections of this paper [3][4][5][6].

Our analysis of interactions in the built-in digital backchannels of VW enabled us to recognize that these rigid social codes do not exist in virtual conferences. Much more freedom is allowed, yet specific rules do apply. What could be perceived by external observers as "nearly everything is allowed" can be, according to our research, classified into six (6) learning categories that we will call "virtual world's conferences basics". It may help those who have no VW experiences, understand how VW conference participants should behave in a socially acceptable way. It also illustrates the way VW presentations are received by conference participants. Everything that happens in parallel to presentations, as well as everything related to the reaction of the audience at the end of presentations fits in these categories.

Existing research on "reception" does not cover the specificities of VW academic conferences and therefore, these six categories cannot be compared with anything existing in reception literature and provide the first insights about reception by members of the audience, of information presented during professional communication and academic conferences in VWs.

The six categories we identified are "Technical Learning" (I), "Social Codes Learning" (II), "Social Space Learning" (III), "Question Session Learning" (IV), "Learning about Time perception" (V) and finally, "Learning about Exchange of Information" (VI). These reception categories occur, in no particular order, all along the process of VW presentations. We found that they are sometimes lived by avatars in this presented order, but some categories can also, sometimes, occur several times during a given presentation. A good illustration of this is the fact that avatars can encounter technical problems at any time during a presentation.

We will explain each of these categories in details and illustrate them with examples.

I. Technical Learning

This learning is about technical problem solving and exchange related to VW technical know-how.

- Example 1: *"Presenter's board went black, lol"*
- Example 2*: "last technical checks… do you want to check your voice?"*
- Example 3: *"Didn't know that a presenter's voice can pass more than 20 meters… even more…Argh…"*
- Example 4*: "I can hear applause but I can't hear [presenter]… help!"*
- Example 5*: "[avatar name] use your alt key and mouse to zoom in on [presenter]"*

VW conference participants can encounter technical problems at any time during a session, which could seriously alter the accuracy and quality of their reception. Our analysis shows that members of the audience - be it organizers or simple participants - are always willing to provide help, ensuring a smooth experience for everyone.

II. Social Codes Learning

A conference participant who wishes to attend certain presentations has to agree to social codes first, as illustrated in the following examples:

- Example 6: *"If you wish to attend this presentation, you agree that you may be filmed and chats can be copied."*
- Example 7*: "Hello all, please be aware that the Main Auditorium sims are on ChatBridge now. That means that anything you type in Local Chat is heard by anyone on all four sims! [...]"*

For a participant's avatar, it is clear that his behavior, during the conference, will be observed. You find, for example, many avatars taking "snapshots" at any time during presentations. These are not only social acts, but also a way of capturing visuals of the slides shown at presentations. The frequency of taking pictures during VW presentations is much higher than what can very occasionally be seen in live conferences. They can even be considered as a "usual habit" of collecting copies of presented slides.

Along the sessions we analyzed in-depth, there were on average 42 snapshots taken per session. At the lower end, there was a session with only 11 snapshots taken. At the high end we find the award winning ceremony during which 151 snapshots were taken by members of the audience. Another interesting example is described below:

- Example 8: During one of the analyzed sessions, the presenter ignored responding to the 13 times he was asked about where his slides could be accessed online, which might be interpreted as his unwillingness to provide copies to the audience. As a result, 98 snapshots were taken during this session, as a way for the audience to use the

means available in the VW to collect their own copies of the presented slides.

Once the social codes are accepted by the avatars, they can move further to the "social space" behavior encountered during VW academic conference presentations.

III. Social Space Learning

A) **Personal comments**

This category can be seen like a "Friends Lounge". Once you understood the social Codes, you allow your avatar to experience this "closed" social space. The exchanges taking place in chat format, in parallel to the presenter's speech, become more personal. Here is an illustration,

- Example 9: *"Yes, they do not have the maturity to understand each other's limitations… "*

Such a statement is visible by any VW participant to the presentation. It is a clear reaction to what was said by the presenter. It can be considered as a real judgment of research competencies that would usually be privately shared, during a physical professional or academic conference, between two professionals knowing each other quite well. In a physical presentation social space, such personal comments would not be made aloud in front of a whole audience.

Despite the availability of more private backchannels, such as Instant Messaging, in the VW, members of the audience still chose to exchange such a comment in public chat, where all members of the audience attending the presentation, could see it. This is not only socially allowed, but welcome. Somehow avatars, who have not known each other before the conference, are invited to openly react to presentations and comments. This enables participants to practice social exchanges and get to better know each other professionally.

Although presenters' real identity is known to the audience, they generally present as their avatar, which carries a different name. Members of the audience attend as their own avatars, which also carry a different name than their real life persona. Consequently, there is generally no clear knowledge on levels of expertise nor on social background data. Everyone is seen in form of his semi-anonymous avatar participating, reacting and willing to exchange socially during these VW conferences.

B) **Parallel conversations**:

Presenters and attendees don't seem to be disturbed by parallel conversations, as the participation of numerous avatars in chat, are part of the normal social behavior in this virtual space. This is clearly illustrated in the following examples:

- Example 10: *"… the cave is full… Lucky that I found a place."*
- Example 11: *"Hi there… you know this movie too…"*

- Example 12: *"looks good… "*
- Example 13: *"I'll go for lunch then…"*
- Example 14: *"The fish and I are leaving"*
- Example 15: *"[name] munches his red licorice"*
- Example 16: Another interesting illustration we encountered in our analysis is during a question and answers phase immediately following the formal presentation part of a session. One member of the audience congratulated another one on a new promotion. The conversation immediately switched to further congratulations by other members of the audience, as well as on the recognition of the skills of that person, how deserved the promotion was and how useful it would be to the academic community present at this conference.

C) **Rich feedback**

Our analysis also showed that immediate social feedback at the end of presentations seems to also be very typical of VW academic conferences. It can be considered as a real "opinion barometer". Members of the audience applaud or immediately start typing their first impressions and opinions about the presentation. Excluding the atypical awards ceremony, no less than 406 such feedback comments were identified during the 7 analyzed sessions. This averages 58 feedback comments for each session. Examples of such comments include:

- Example 17: *"That was epic and so are you!"*
- Example 18: *"APPPPPPLLLLLLLLLLAAAAAAUU UUUUUSSSSSEEEEEEEEE"*
- Example 19: *"Bravo"*
- Example 20: *"Claps"*

This is a very interesting phenomenon when one thinks of the efforts presenters in physical conferences have to invest to gather real objective and valuable feedback on their presentations. In physical venues, paper questionnaires can be prepared and distributed to the attendees at the end of a presentation, urging them to provide feedback on their perception, by filling-in the questionnaires; alternatively, url's can be provided to enable attendees to share their feedback by filling-in online questionnaires. But in most cases, physical conference participants would not even take the time to do so. They quickly move to the next session they are interested in.

In VW conferences you do not need to ask, feedback will anyway be provided to you at the end! Avatars do it! This type of social action can be considered as a formal conclusion to an oral presentation, at the end of the Questions Session.

IV. Questions Session Learning

In the context of VW conferences, one experiences a real explosion of reactions to questions. Avatars react immediately. Here is an example illustrating this:

- Example 21: At some point in time during a session, the presenter asked the audience: *"What are the various types of social media you use?"* This question was immediately followed by a 10 minutes "avalanche" of answers.

From these exchanges between the different participants and the presenter, one could very quickly gather extremely useful and relevant information about advantages and disadvantages, content, community activities, trends, habits as well as do's and don'ts of a multitude of diverse social media platforms. In the context of physical conferences, it would take you a lot of time to visit these social media to gather this level of information. In the VW conference Question Session phase, one gets a rich content summary delivered in a very short time! You don't even need to take notes. All you have to do is copy and paste this section of the chat in a file you can save on your computer. This is almost comparable to a brainstorming session where participants share their knowledge on a subject. This leads us to the next category.

V. Learning about Time Perception

One does not only get rich content feedback from the audience but can also save time!

If we go back to example 21 above, on the use of social media: normally, one has to visit a certain number of Forums, Blogs, etc, to get a comparable level of information on the subject. A VW conference participant got a whole summary with essential information within no more than 10 minutes! What are 10 minutes compared to hours spent in social media tools, to get a better understanding of their real communication value?

In quite a few of the presentation sessions we analyzed, we also observed presentations lasting more than 35 minutes with no backchannel chat conversation in parallel. One possible hypothesis of this phenomenon is that it is comparable to television behavior: sometimes, avatars are just watching. Yet the time spent by members of the audience in VW conference sessions is very appreciated by presenters. Here are some examples of comments illustrating this appreciation:

- Example 22: *"Thanks a lot for staying with us! We are conscious about the value of time! [...]"*
- Example 23: *"[...] have to leave for a 4 hours drive now [...]"*

Avatars share time, give time, spend lengthy times exchanging ideas and finally, they end up saving time through the virtual presentation process.

VI. Learning about Exchange of Information

Our analysis showed that there is a lot of additional information exchanged amongst attendees or between the audience and the presenters, on the built-in digital backchannels, in parallel to what is presented in the official content of VW conference sessions. The type of information exchanged relates either to where to find copies of the presenter slide-shows, other references around the subject, videos, books, VW places, personal experience, etc. Of course the provided web page addresses (url) can be immediately accessed by simply copying them from the chat history into the address field of a web browser. Here are some examples of such exchanges:

- Example 24: *"You can also go to* [url]*"*
- Example 25: *"Found Marc Prensky writings... he's got an interesting new paper for Educational Technology [url]"*
- Example 26: *"[This was] one of the first films ever to use composing techniques, it was quite impressive and scared the first viewers. That's a little bit of film history for you"*
- Example 27: *"[Annabel's Twitter Map] tracks Tweets across the USA"*
- Example 28: *"Example for the story idea [url]"*

CONCLUSION

This research was a first attempt to understand how presentations are received by the audience in virtual academic and professional conferences taking place in the 3D VW of Second Life. Six distinct categories of learning are identified, providing those new to the 3D VW conferencing concept, with "Virtual World's Conferences Basics" to help them understand how VW conference participants should behave in a socially acceptable way, as well as how VW presentations are received by conference participants.

This paper also identifies added values in the VW conference format, showing that the VW built-in communication backchannels enable a very high level of interaction, amongst participants and between participants and presenters, which clearly addresses the debated challenges of formal real life conference presentations.

Previous research had already identified the use of digital backchannels such as Twitter in real life conferences, as a valuable way of improving active participation in conferences. Further research is still needed to understand how the use of these communication backchannels in real life conferences, compares to the use of built-in communication backchannels in VW conferences, or how and to what extent the use of classic and built-in communication backchannels can coexist during VW conferences . Additional research could also include comparisons with the use of digital backchannels in normal online and web conferences (e.g. webcasts, Cisco's Jabber, etc)

This paper is limited to the analysis of built-in backchannel communications during an academic conference in the 3D VW of Second Life. This leaves opportunities for further research work in other types of conferences in SL, as well as in alternative 3D virtual

worlds such as Open SIM or Facebook's Cloud Party or more commercial 3D conferencing solutions such as Avayalive or 3dxplorer.

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