Supporting Creativity in Performance Lectures

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ABSTRACT

This paper presents a reappraisal of how conventional lectures could meet the expectations of 'digital native' students. Our approach is to consider how digital media could be integrated further into the lecture by transposing knowledge through artistic as well as pedagogical means to form a 'performance lecture'. We began by developing a design and evaluation framework to foster new creative thinking and also to assist as a structuring tool. The framework draws on the disciplines of interaction design, cognitive psychology and performance art. The framework consists of five elements, four design production parameters and a performer/audience interaction model. The production parameters consist of modal expressions, spatial design, temporal flow, and audience engagement and spectatorship. Connecting the five elements together are rhetorical considerations. This paper presents the outline structure of this framework and concludes with some findings from an evaluation of framework effectiveness to help in creatively developing performance lectures.

Author Keywords

Performance lectures; interaction design; cognitive psychology; performance arts; audience engagement

ACM Classification Keywords

H.5.5 Information interfaces and presentation: Sound and music computing
H.5.m. Information interfaces and presentation: Miscellaneous.

General Terms

Human Factors; Design; Measurement.

INTRODUCTION

The motivation for this research is to challenge and reinvigorate the conventional lecture and discover what a lecture could become by thinking creatively about the deployment of digital media technology, not as a supplement to the lecture but as an intrinsic part of the learning experience. Learning should not be based on what technology can do but on how audiences can learn within a digital media environment [18].

A 'lecture-as-performance' view helped foster alternative delivery mechanisms such as combining and mixing conventional oration with story-telling, spatially distributed live and recorded audio and music, text and graphical animations, multiple video projections onto different walls, even the floor and ceiling. While many of these suggestions might provide an audio-visual spectacle, our interests lie in exploring if this approach could also be pedagogically successful?

A performance lecture is therefore a new concept and this paper describes the early embryonic stages of its development, in particular how to manage what could be an unwieldy creative process. As examples of performance lectures and this particular hybrid approach do not yet exist, we decided first to produce a development framework that would act as an instrument for evolving lectures into performance lectures. Our methodological approach was inspired by related research and artistic work using mixed reality described by Benford and Giannachi [2] who refer to the use of 'sensitizing concepts' as a means of providing guidance and analytical direction for exploratory fields of creative and evaluation study.

PROPOSED DEVELOPMENT FRAMEWORK

We view a performance lecture as a hybrid artefact stemming from three disciplines: cognitive psychology, performance art and interaction design. As one of the goals is to ensure performance lectures engage audiences through novel methods of dissemination, it's important that audience interaction is considered at the cognitive level. For example, there are known cognitive processing strategies of text and visual to ensure effective learning if delivered concurrently [7].

Interaction design offers a range of analytical methods and has been used to model information flow between the performer and audience. Performance art provides a historical context, creative inspiration and critical argument on the nature of performance. By bringing these disciplines

together, our hope is we might successfully combine artistic and pedagogical perspectives.

The framework consists of six elements. These include four production parameters: modal expressions, temporal flow, spatial design and audience engagement which are collectively managed through the rhetorical aspects of the performance lecture. The intended thoughts, ideas and meaning of the performance lecture are constructed by independently and collectively considering these five elements. Through this process a performance lecture is produced and articulated as a notated interaction model between the performer and audience. Each performance lecture has its own interaction model and because of this the effectiveness or experiences can be assessed against the audience's recall of the lecture.
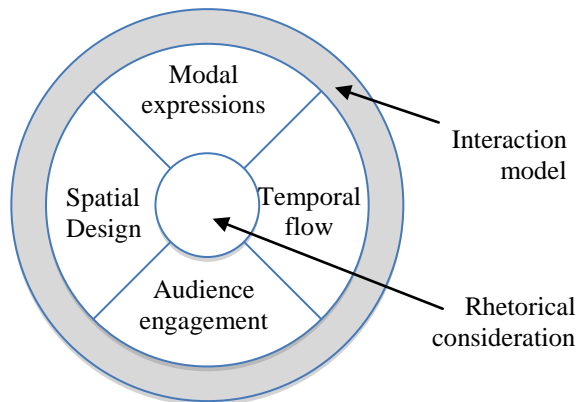

Figure 1. Framework for design and evaluation of performance lectures

Because conventional rules and rituals of a lecture are being re-appraised, rhetorical considerations are required to manage expressive and creative latitude. The art of good audience engagement depends on the performer being able to make appropriate content and delivery decisions about what to make explicit, inferential, peripheral or redundant. Other decisions come into the frame such as how far to depart from a 'mono-logical and mono-vocal narrative' [1]. However, as we intend to use digital media in more creative ways, this 'performer' role may not be so distinct. Lecture audience expectations will need to be carefully managed as perceived integrity often lies in social conformity and audiences may become skeptical if the event appears to be intellectually superficial.

It is this blurring of the rhetorical stance between a lecture and a performance lecture that is intriguing as a production problem. Without rhetorical consideration, an audience may find it difficult to understand their role as a listener or spectator. Thus an important aspect of this research will be to develop mechanisms to assist the audience to 'decode' the performance lecture; to encourage active analytical

listening and improve the aesthetic experience when conventional narrative structures may not exist.

The four 'quadrant' elements in Figure 1 provide opportunity for divergent thinking about content and delivery. The common modal expression for a lecture is oration. Our intention with this framework was to allow other modalities to be critically considered as part of the performance lecture environment. Music can evoke physiological as well as strong emotional feelings in the listener. Music fosters strong but imprecise emotions and our research suggests that its role will be limited to mood setting. However, soundscapes would appear to be more flexible. Soundscape is a term defined by Schafer [9] to refer to an auditory landscape which can consist of natural and/or artificially created sounds. Soundscapes have very powerful 'referent' qualities and can be used to alter or affect human behaviour.

Moving images such as animation or video have also been used to augment and supplement key points in lectures. The ubiquity and acceptance of the projected images, we think, provides an opportunity to use images differently. Consideration can be given to foreground and background roles, or providing new ways of demanding attention or perhaps purposefully deflecting from it.

The spatial design in which the performance takes place also offers creative latitude. Stage placement and delineation also offer creative possibilities for re-negotiating physical cues between the audience and performer. Multi-screen displays are used in the entertainment industry and can be used as a form of stage. Although large visual displays are used at public events, there has been little research on how the audience experience of multi-screen productions can be creatively exploited beyond visual wallpaper although some research have been carried out in an educational context [3] Location-based audio systems have been used to enhance learning at tourist attractions [5] or for artistic purposes. However, we are not aware of any research work where spatially distributed audio has been used for educative purposes.

Deeper audience engagement will be achieved by encouraging active or deep listening through cognitive engagement. One way of doing this is by adhering to the listener's pattern of expectations and also playing with the cognitive functions of listening such as 'differencing' which selects or de-selects what we listen to and pattern recognition which allows us to identify and tune into certain sounds.

Finally, the outer layer of the framework, the interaction model, allows a performance lecture to be structured and annotated not just in terms of content but also to make explicit representations of action and thought. The model borrows elements of activity theory [4, 8] and Laurel's Elements of Qualitative Structure [6]. Activity theory was

important to consider because it brings together activity using a wider social and organisational context combining this with 'consciousness'. This cognitive engagement needs to be explicitly articulated and this is achieved through 'objects'. The term 'object' is an important concept in AT and differs in meaning to its typical understanding in HCI or design. It was important that this model encompassed abstract and concrete representations of meaning and understanding in both the performer and audience. Thus, effectiveness of the performance lecture can then be measured by identifying parity between commonly shared artistic and pedagogical objects from the performer to the audience.

To help contextualize the abstract description of the framework and understand how it can be used to creatively design and evaluate future performance lectures, the framework was used to design a three-screen (triptych) video and the interaction model and then used to evaluate the effectiveness of the video presentation as an innovative medium. The triptych video spatially and temporally spreads video and audio content across three large displays; thus forcing the viewer to actively 'assemble' a narrative and meaning from the fragmented elements. The video consisted of a reportage description of a manufacturing organisation.

It must be stressed the triptych video was not a performance lecture but could be a potential component of future performance lectures. The aim at this stage was simply to validate the framework and evaluation model.

An evaluation study was carried out with three objectives. 1) To explore how much of the pedagogical and artistic intent embedded into the triptych video was successfully conveyed and what type of audience experiences were gained. 2) To assess the framework as an instrument for developing performance lectures. 3) To assess the impact a post-hoc evaluation approach has on future creative thinking for the design of performance lectures.

12 students volunteered to watch the 12-minute video. All subjects viewed the video alone except for the experimenter. Eye gaze during the video along with subsequent interview were video recorded for data analysis purposes. Subjects were undergraduate students predominately between the age of 21-30 studying either psychology or computing.

After watching the video, subjects were interviewed using structured and semi-structured questions to elicit recall accuracy of key events and scenes, personal experiences of any cognitive load, how they felt their attention had been guided using the multi-screen design and finally an overall appraisal of their experience in terms of engagement, entertainment, and educative value. The results from the questionnaire and interview transcripts were then reviewed and compared against the intended performance objectives of the triptych video.

The feedback gained from this study revealed subjects failed to comprehensively interpret the video. Our explanation for this related to the contextual setting of the study. Subjects were not given any form of preparation or introduction to the video and the subject matter was unfamiliar to them. The lack of an introduction was quite deliberate because we were anxious not to bias their expectations. We were anticipating some disinclination towards the video; however, the limited lack of awareness to the mixed modal themes was still surprising. In contrast, the video was also shown to some of the management team from the organisation the video was about. Their responses were diametrically opposite to the experiment subjects. They were amused by the unusual juxtaposition and fragmentation of scenes and knew exactly where each shot had been taken and thought the video accurately conveyed the company but not in ways they would have anticipated.

Findings from the study have helped inject caution into the way novel approaches to audience engagement are introduced and has highlighted the need for a stronger audience preparation for their spectator experience. With this in mind, we are beginning a new comparative study focusing principally on different methods of audience priming.

Conclusion

By iteratively moving through this framework by radiating from the centre to the perimeter and then back to the centre, it should be possible to derive innovative performance lectures that offer engaging audience experiences using novel approaches to content delivery.

The process should begin with rhetorical considerations. However, we feel defining these 'considerations' still requires deeper clarification. Our intention is to continue with this iterative process by developing small parts of a performance lecture until the component elements of the framework stabilize. Once this occurs, performance lectures can then be confidently designed with purposeful artistic and pedagogical intent imbedded into them.

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