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Dance-Making on the Internet: Can On-Line Choreographic Projects Foster Creativity in the User- Participant?

Sita Popat and Jacqueline Smith-Autard

The Internet is an increasingly pervasive medium, utilizing multimedia technologies in global communication. In keeping with their past exploration of other media, dance-makers are examining the possibilities of this platform. However, most dance on the Internet is presented on the World Wide Web and screened in the form of dance video, created with the constraints and possibilities of video in mind. This use of the Web offers no new opportunities in movement form and content beyond those already being explored by videodance artists. Indeed, the cheaper and more commonly available hardware and software for video capture and compression place great limitations on the feasible quality and length of video presentations on the Web. If it is not to take hours downloading via modem, each video clip must last only a few seconds and be presented in a window that is considerably smaller than the full screen. Cutting-edge technology and faster Internet connections improve the quality, but they are expensive and still not common in the home environment. Why, then, should dance artists be interested in the Web as a dance platform at all? The answer lies in the possibilities for exploring creativity through interaction with the viewer.

The study presented here was carried out between October 1998 and March 1999. Although some time has elapsed since the original research period, the study remains relevant [1].

THE STUDY

The focus of this study was the level of creative involvement that the participant experiences in the process of dance-making via the Internet. The study examined whether an interactive dance-making web site can provide a creative experience for people with widely varying levels of dance knowledge. Given the limited number of examples of this type of project, it is clear that generalized conclusions cannot be drawn from a study of this size. However, the study does identify issues for consideration in the design of further interactive Internet dance-making projects and provides a basis for ongoing research in this area.

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ABSTRACT

Interactive Internet artworks invite viewers to become involved as user-participants as the creative process unfolds. Through analysis of selected Internet projects, the authors discuss the potential for facilitating an interactive, creative experience for participants in the process of making dance. This study was carried out in 1998 and 1999, but the findings remain relevant, as there have been few subsequent developments in the field.

A survey of interactive Internet projects that involved the participant in the dance-making process found only five web sites within this category. Three projects were selected: Stephan Koplowitz's *Webbed Feats* and its presentation *Bytes of Bryant Park*, Richard Lord's *Progressive 2* and Amanda Steggell's *M@ggie's Love Bytes* [2]. These three projects exemplify three main approaches to interactive dance-making on the Internet. *Bytes of Bryant Park* uses the web site as a base for the collection of data, which is then used by the choreographer to create a dance in the absence of the participant's involvement. *Progressive 2* provides pre-recorded movie segments that the user can arrange on the web site for his or her personal viewing. *M@ggie's Love Bytes* web site is the base for a series of Internet performances within which participants may become involved in real time by logging on at the correct time and taking part. We analyzed each project to discover whether a model providing an optimum creative experience for the participant currently exists [3].

METHODOLOGY FOR ANALYSIS

In order to evaluate participants' experiences of the Internet dance-making process, we asked five people to participate in all three web sites. We observed their interactions with the sites and then interviewed them about their experiences, with emphasis on discovering their feelings of creative involvement in the process and product. As *Webbed Feats' Bytes of Bryant Park* had already taken place, the interviewees viewed the original site and participated as if the performance had not yet occurred. In the case of *M@ggie's Love Bytes*, the interviewees visited the web site and listened to a description of the process but did not see the performance. We interviewed each participant immediately after the participant had interacted with the projects, asking open-ended questions that varied according to our observations of the participant's particular interactions. Four main subject areas were used as guidelines for the interviews:

- Support for the participant in the creative environment
- Motivation to create
- Personal evaluation of product created through participation

Table 1. Interviewees' Dance and Internet Experience

Interviewee	Dance Experience	Internet Experience
A	Professional	Some
B	None	Some
C	Professional	Low
D	Some	High
E	None	None

- Previous knowledge of dance or the Internet as a prerequisite.

Popat conducted all interviews and took detailed shorthand notes during both observation and interviews.

To discover how prior knowledge affected the experience, we selected interviewees with a variety of levels of dance knowledge and experience with using the Internet. All interviewees were British, Caucasian, aged between 21 and 28, and were either attending university at an undergraduate level or had recently graduated. Interviewee A was a professional dancer/choreographer with Internet experience. Interviewee B had no dance experience but some Internet experience. Interviewee C was a professional dancer with very little Internet experience. Interviewee D had some dance experience and a large amount of Internet experience. Interviewee E had no dance experience and no Internet experience (Table 1).

Our initial analysis of the web sites was based upon the observations and interviews with participants. We also conducted supporting and clarifying analyses of each project using the model of Abbs's creative cycle. Abbs's creative cycle is concerned specifically with the artist's relationship with the medium, and with the developing artwork. Abbs has proposed five phases that the artist and the artwork pass through together in the process of creativity:

Phase 1: impulse to create/stimulus

Phase 2: working within the medium

Phase 3: realization of final form

Phase 4: presentation and performance

Phase 5: response and evaluation [4].

Hanstein has presented a similar model in her analysis of the four modes of artistic participation, in which the choreographer functions as artist, dancer, audience member and critic [5]. Hanstein's modes correspond closely to Abbs's phases, both suggesting that the creative process involves a series of stages in which the artist and the artwork interact with each other. This corresponds with the way in which the participant in an interactive dance-making process on the In-

ternet must interact with the material on the web site. Analysis using Abbs's cycle exposes the communicative nature of interactive dance-making, which is shown—through the final analysis of Popat's experience of viewing *M@ggie's Love Bytes* as a live Internet performance—to be central to the participant's experience.

WEBBED FEATS' BYTES OF BRYANT PARK

The Webbed Feats performance of *Bytes of Bryant Park* took place in 1997 in Bryant Park, New York. This piece was choreographed using ideas and stimuli provided by visitors to the Webbed Feats web site, which functioned for 13 weeks prior to the performance. Visitors to the site were invited to participate in five simple tasks. One of these was to provide some poetry or comments in response to pictures of the park, another to supply 60 seconds of "soap-box" text on the subject of life in New York. A third section required the participant to submit text for a play based on Goethe's *Faust*, while a fourth asked for a sentence on parks in general and props or instructions for four dancers. All four of these tasks required the participant to fill out highly structured on-line forms.

The fifth task involved 15 images of a dancer in different poses, from which the participant could choose five images to be strung together. The web site then animated those images for the participant to see what he or she had made. Spaces were provided for the participant to type in instructions on quality or story line. It was also possible to submit music, image and video files by e-mail.

Participants whose submissions were chosen by the choreographer were notified by e-mail and credited in the performance program. Stephan Koplowitz choreographed the dance using the participants' submissions as stimuli. The dancers also performed improvisations based on the submissions during the performance. Musical submissions were integrated into the soundtrack, and images were constructed into a montage for

screens in the park. The dance was performed in New York, and photographs and short video clips were put on the web site to be viewed by participants who could not attend the performance.

Analysis of Webbed Feats' Bytes of Bryant Park

Support in the Creative Environment.

Bytes of Bryant Park struggled initially to engage the participant, as it gave the feeling of being highly evaluative. Ideas were chosen for inclusion as in a competition or examination. Interviewee A, who had professional choreographic experience, stated, "I don't want to write anything that would sound stupid." Interviewee B's response to the site was, "What do they expect of me?" Interviewee E, having no dance knowledge, could not understand why the choreographer was asking for stimuli and asked, "Can't they think of their own ideas?"

Motivation to Create. The choreographer chose the theme of parks, which the interviewees found rather bland and uninspiring. They were also generally unfamiliar with the more specific themes within the piece, such as Stein and Goethe, and the strong link with New York was also alienating. All interviewees felt greatly distanced from the dance-making process, as they did not know at the time of completing the task if their input would be used in the performance.

Personal Evaluation of the Product. As the performance had already occurred, there was no opportunity to see the product of the participants' interactions. However, all the participants knew that they would not have been able to travel to New York, and Interviewee E was "disappointed" that all she would have seen of the performance would have been images and short video clips. Interviewee D's response to the site in general was, "Is that it?" He said that he wanted to "see more" in terms of images and video.

Previous Knowledge as a Prerequisite.

Bytes of Bryant Park requires a basic knowledge of the Web and use of a computer mouse, as do all three sites. In discussions of dance, it uses a large amount of technical language, which some of the participants found threatening. However, *Bytes* only requires practical dance knowledge in the Promenade section, which offers the dancer figures for sequencing. While knowledge of dance would make



Fig. 1. Screenshot of *Progressive 2* web site video windows <<http://www.webdances.com/pro2.php3>>. Nine videos are arranged on the computer screen during the interactive process. Participants may start and stop the videos to control the dance. (© Richard Lord)

the choices more informed, it is not strictly necessary, as visual skills or even random methods could be employed. The other four sections all involved answering in the form of written submissions and as such required reasonable literary skills but not, apparently, any dance knowledge. However, Interviewee E, who had no dance experience, was unable to see a connection between a written submission and the physical activity of dancing, so perhaps this assumption cannot be made.

PROGRESSIVE 2

Progressive 2 displays nine small video windows in three rows of three, which fit easily within the computer screen as a group (see Fig. 1). In each of the windows there is a video of a single dancer performing in a room. All the video clips apparently show the same dance in a fragmented form, so that the dance does not flow smoothly but omits the transitions between movements. Fragments of the same movements appear in more than one window. Participants may stop or start the individual videos by clicking on them with the mouse to see what effect each decision has on the overall screen [6].

Analysis of *Progressive 2*

Support in the Creative Environment.

Since all decisions are made and viewed solely by the participant in constructing the dance from the available material, all evaluation is intrinsic. Interviewee B said, "I like to be in control" and that he enjoyed "playing around." Interviewee C also liked this feeling of control, describing it as "like being in charge of editing dance for camera." Both Interviewees B and C enjoyed seeing people move on the screen, but Interviewee E found the fragmentation made her "feel dizzy."

Motivation to Create. Motivation varied largely according to knowledge of the dance medium. Interviewee E, with no dance knowledge, complained "my eyes can't rest on anything," and she quickly chose to leave this site. Interviewees A and C, both with professional dance experience, enjoyed the editing process, finding form in the movement. Interviewee B enjoyed what he described as "playing" but stated that "the novelty soon wore off."

Personal Evaluation of the Product. This criterion was not relevant, as there was no definable finished product. There was no option to save an arrangement of win-

dows or to create a beginning or end. All participants found this frustrating.

Previous Knowledge as a Prerequisite.

Progressive 2 cannot be fully appreciated without at least a basic knowledge of dance form, as form can only be created where it can be perceived. Interviewee E's comment that "my eyes can't rest on anything" indicated her inability to find any form in what she saw. Interviewee D also stated, "I did not know what was going on." Interviewees A and C, both having dance experience, were quick to note the relationships between the frames and began to discern unison, canon and more complex forms. However, these skills can also come from knowledge external to dance, as shown by Interviewee B, who managed to perceive simple forms such as unison in spite of a lack of dance knowledge. By requiring some knowledge of dance, *Progressive 2* risks alienating participants with no knowledge and yet it offers a greater challenge to those with more knowledge.

M@GGIE'S LOVE BYTES

M@ggie's Love Bytes presents a real-time performance, so it is possible to see the dance only while it is actually being performed somewhere in the world. The piece consists of three female dancers in bras and knickers carrying sink plungers, some musicians, a choreographer at a computer desk, two projections of computer screens behind the dancers, a sound system and other technological aids. The performance is viewed by an audience in a theater space and also over the Internet via videoconferencing. During the performance, Internet viewers may submit sound and image files, which are played or projected on the screen behind the dancers. A continuous textual dialogue that takes place between Internet viewers, choreographer and musicians is also displayed on the screen along with the images of the viewers from the videoconferencing system. The atmosphere is extremely informal, and all its workings, both technological and performance based, are visible. This description, based on images and text on the web site (Fig. 2), was the basis for the first stage of analysis prior to the live performance.

Analysis of *M@ggie's Love Bytes*

Support in the Creative Environment.

Interviewee B described this approach as "give us your stuff and we'll dance it." He said that he felt that he did not need to

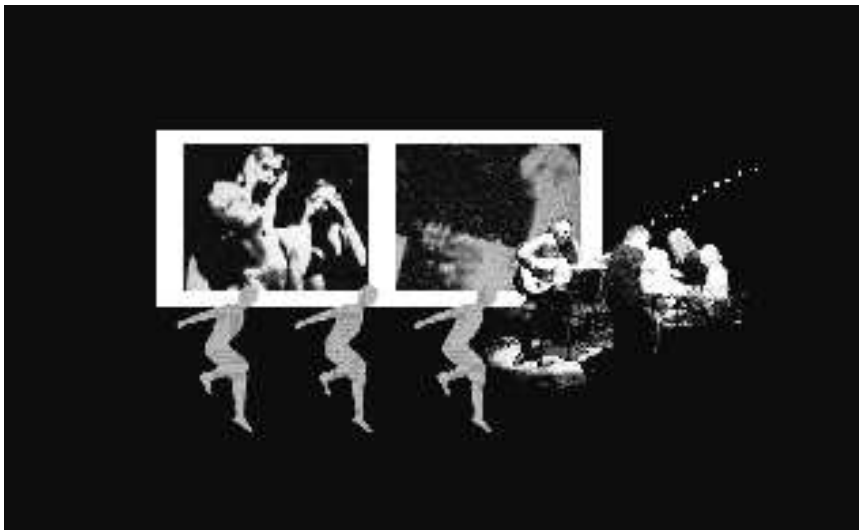


Fig. 2. Screenshot of M@ggie's Miniature Theater. This image, from the M@ggie's Love Bytes web site, is part of the description of the live performance situation <<http://www.utam.uio.no/~amandajs/slideshow.html>>. (© Motherboard)

know anything about dance to participate creatively. Interviewee D liked the idea of being "a director." All the interviewees liked the informality, but Interviewee E was concerned that she might say something that sounded "silly."

Motivation to Create. All the interviewees appreciated the immediacy of the situation as an important factor in motivation. Interviewee B liked the idea of "really being involved . . . seeing my stuff interpreted." Interviewee A stated that she felt immediacy to be an essential element of the Internet. Interviewee C was particularly interested in the fact that she would be able to see "real dancers."

Personal evaluation of the product is omitted from this section, as the product was analyzed later in the study when the authors attended the performance of *M@ggie's Love Bytes*.

Previous Knowledge as a Prerequisite. During the performance, *M@ggie's Love Bytes* assumes knowledge of how to use videoconferencing software, although technical help is given on the web site. This project does not seem to require any dance knowledge, as submissions are only used as inspirations by the dancers and choreographer.

THE CREATIVE EXPERIENCE OF THE PARTICIPANT

According to the above analyses, none of these web sites provides a particularly creative experience for the participant. Participants' involvement in the process of

dance-making was avoided in the cases of Webbed Feats' *Bytes of Bryant Park* and *M@ggie's Love Bytes*, where all creation of the dance takes place between artists and dancers, without the Internet participants. *Progressive 2* appears to provide a supportive environment, yet the lack of a final product inhibits motivation to participate. There were some dance or perceptual skill demands in forming material but, although this attracted Interviewee A, an experienced dancer, it had a negative effect on two of the interviewees with less dance experience. This problem raises the question: Who are the target viewers for interactive dance-making projects on the Internet? The above projects have not apparently managed to obtain a balance of constraints such that participants with a variety of levels of dance knowledge can all participate creatively. Perhaps it is not possible to provide a creative experience on the Web for the participant who does not already possess a high level of specialist dance knowledge. But what is the justification for interactive dance creation if the average member of the Web-using public cannot participate creatively?

However, when the interviewees were asked which project felt the most creative to them, all of them indicated *M@ggie's Love Bytes*. They felt that *Bytes of Bryant Park* provided a very limited feeling of participation and, although *Progressive 2* provided a strong sense of control, it was frustrating due to lack of product. But *M@ggie's Love Bytes* differed from these in that the communication between the In-

ternet participant and the dancers appeared to be two-way. Participants communicated by submitting a multimedia file and then saw the dancers respond immediately via the screen. This allowed the participant to send other files in reply to the dancers. It was this direct, synchronous, two-way communication in *M@ggie's Love Bytes* that provided such a strong sense of participation. This response was based only on the description of the process, however, as the interviewees did not see the actual performance.

ABBS'S CREATIVE CYCLE

When Abbs's creative cycle is applied to the projects in question to analyze the relationship between participant and material (including artists), it clarifies the success of the *M@ggie's Love Bytes* model and exposes the missing features in *Progressive 2* and *Bytes of Bryant Park*. *Bytes* never allows participant involvement beyond the first phase of supplying stimuli for the choreographer to begin creating. Phases two and three (working within the medium and realization of final form) take place so far removed from the participant that by the time the performance is reached in phase four, the participant is unlikely even to recognize his or her influence in it. *Progressive 2* fixes the participant in the third phase: realization of final form. It does not allow the participant into the first or second phases, since the movement material is provided, nor does it permit the participant to complete the dance, so it can never go beyond phase three.

Only *M@ggie's Love Bytes* completes the cycle. The participant submits a stimulus at phase one. He or she then watches the dancers work through phases two and three, creating and forming material through the act of improvisation. On viewing the dance (phase four), the participant may then respond either in text or by submitting another stimulus. The full cycle takes place by connecting artists and participants through synchronous, two-way communication.

M@GGIE'S LOVE BYTES IN PERFORMANCE

The following section is a description and analysis, based on the frameworks already established, of a live performance of *M@ggie's Love Bytes* as experienced by the authors both in the theatre and on the Internet [7]. In its failure to fulfil the prom-

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Mr E & Mr K: if we only could hear the sound of that plunger...
m@ggie: okay aricsplayinghissolo
m@ggie: now
m@ggie: play zogo
tete: good blowing the horn, is this premade?
nood@stockton: oh that was noisy!!!!
nood@stockton: whatu alldoling?
Zoggo: go easy on me.. hasven't played for about 4 years;)
Mr E & Mr K: go Aric,go
tete: only strangenoises,.....can be fun though.....
Mr E & Mr K: was that zoggo playing?
m@ggie: thanku aricfioryoursolo
m@ggie: great sound
m@ggie: e=m talkto me
Mr E & Mr K: ifmusicbe the food of love,play on...
nood@stockton: some strangenoises here atm

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Fig. 3. Text sample from chat window of *M@ggie's Love Bytes* performance, 23 January 1999. Participants in the live Internet performance interact with each other, the choreographer (m@ggie) and the musicians (nood@stockton). (© Motherboard)

is implicit in the above analysis, *M@ggie's Love Bytes* exposes questions for future research.

Throughout the performance, viewers took part via Internet videoconferencing in a discussion that was displayed in a "chat window." A "chat window" is a box on the screen in which viewers can have a conversation by typing and reading comments (Fig. 3). The choreographer and musicians joined in the chat, and the audience could see the chat window on the screen behind the dancers. Some of the Internet participants had been specifically invited and had prepared sounds or images to send as part of the performance. Amanda Steggell, as choreographer, cued these elements using pre-arranged words or signals, but also received offerings from other participants. She mixed the sounds via the equipment on her desk and opened and closed images on the computer desktops that were projected behind the dancers. Steggell estimated that 50 percent of the sound used at this particular performance was sent by participants over the Internet [8].

The significance of participants' input to the dance product was not as great as expected, because, while some of the dance was improvised, large sections were pre-choreographed, with audio cues to indicate when the dancers should begin a particular section. Steggell managed those cues from her desk. This gave the dance a greater sense of form than a freely improvised session, which aided

viewing over the Internet. However, it reduced the possibility for direct relationships between the sounds submitted by the participants and the dance. Also, because the studio was arranged so that the dancers performed with their backs to the screen, they could see little of the visual stimuli and the chat window anyway. This did not seem to deter the participants, though, and there was a continu-

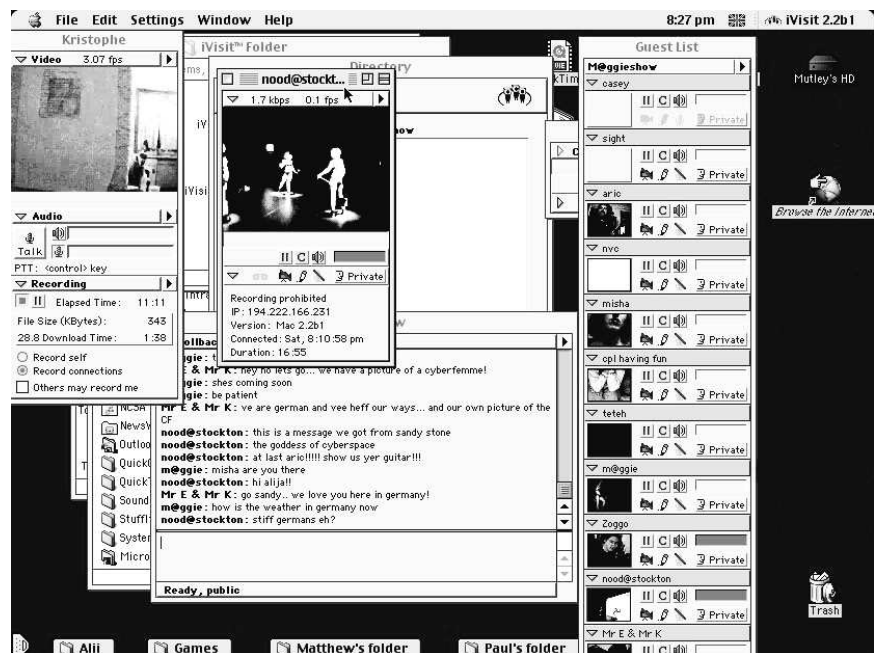
ous informal banter between participants and artists throughout the show.

Comparison between Live Event and Previous Analysis

As expected, *M@ggie's Love Bytes* is indeed a very informal experience and therefore is a supportive and non-judgmental environment for the participant. The motivation to create is in its immediacy, as the interviewees stated in their descriptions. Technological skills are required to download the correct software for viewing via the Internet, but dance-specific skills are not necessary, as the participant does not take part in the choreography. Abbs's cycle of creativity also occurs as stated above, with the participants taking part in phase one, watching phases two and three and having the ability to offer even more feedback than expected by the authors due to the continuous chat.

What apparently did not happen was any involvement by the participants in the dance itself. The work was successful and an interactive event in terms of chat and sharing of sounds and images. However, while many of the participants obviously enjoyed sending and commenting on the sounds, no comments were made about the dance via the chat window. This is possibly at least partially due to the difficulty in viewing the dance via the slow video-feeding connections and small video window (Fig. 4). It is also likely to relate directly to other issues raised earlier in this study: the participants

Fig. 4. Screenshot taken during *M@ggie's Love Bytes* performance, 23 January 1999. This image of Popat's computer desktop shows what Internet participants can see during the performance. (© Motherboard)



may not have had sufficient dance knowledge to be able to discuss the dance, and they were not encouraged to do so by the choreographer. The extreme informality of the situation would have rendered any serious discussion of the dance inappropriate.

The *M@ggie's Love Bytes* model offers a wealth of potential for participation in the creative cycle, if rearranged so that the dance becomes the central element of the interaction. It evidently suffers from the current limitations in terms of bandwidth and compression of widely available network connections, which affect data size and throughput. This reduces the size, quality and speed of the video image. But perhaps the model suffers more from the desire to maintain an informal atmosphere that precludes a serious conversation about dance, even if the participants do have sufficient dance knowledge to proffer unsolicited comments. The possibility exists for discussion and involvement suitable to the knowledge and perceptual abilities of each participant through direct communication with dancers and choreographers. Through watching, listening and offering questions, comments and stimuli, those with knowledge of dance as well as those without could learn about dance and be involved in the creative process and also challenge the choreographer and dancers to question their choreographic approach.

CONCLUSIONS

Interactive dance-making on the Internet at its best should engage everyone involved—the choreographer(s), dancers, technicians and Internet participants—in the process of working together toward the end product. Interactivity that only involves communication between the human participant and the computer does not seem to have the same potential for creativity. The completion of the creative cycle, including the sharing of work with others, in a totality perceivable by the participant, is of greater importance. The ultimate responsibility for the artwork still lies very firmly at the artist's door, as the artist must create a framework for facilitating the participants' creativity. In order for participants to create, they must first have some understanding of what they are doing, otherwise their

actions are based on chance alone. If they do not possess dance knowledge, then the design of the task must either provide the knowledge that they require or draw upon perceptual knowledge that is likely to have been gleaned from elsewhere, for example from other arts, television or nature. Frequent communication between participants, dancers and choreographer can help to provide the information needed by participants.

Part of the nature of the Web is that it is global—while some participants may be having their lunch break, it may be midnight for others. Therefore, for purely practical purposes, the synchronous participation model of *M@ggie's Love Bytes* is not ideal. Also, it does not allow the time for reflective participation: the participant may need time to consider and reflect before returning with new ideas or questions. As Hinkle-Turner states, "Interactive artwork by its very nature suspends the 'space-time continuum' that is often the enemy of audience enlightenment" [9]. She refers particularly to interactive artworks on CD-ROM, but her comment applies equally to Internet-based works. An interactive process of dance-making that takes place over several weeks is likely to be richer in creative ideas than one that takes place over an evening, since the audience members' understanding of the process develops through communication with the artists and each other.

Communication is the key element of the interactive dance-making process and when the communication is effective the participant may feel involved in the creative process. The framework for the process should retain the flexibility to develop over time, responding to the participants' needs, facilitated by two-way communication. The computer bridges the distance between participant and artist, but, where it becomes more intrusive than that, it may interfere with the experience of the participant. In Internet technology, there exists a variety of possible conduits for creativity through multimedia communication between artist and participant [10].

References and Notes

1. The findings presented above led to the development of Popat's empirical research project, which addresses the issues raised in this analysis. Few additional projects have emerged in this area and, aside from Popat's research project, none of them differ in their approach from those described here. See the

Hands-On Dance Project web site: <http://www.satorimedia.com/hands_on/>; see also S. Popat, "Interactive Awakenings: Heightening Consciousness of the Dance Artwork for Artist and Audience Member," in *Consciousness Reframed III: Art and Consciousness in the Post Biological Era, Proceedings of 3rd International Research Conference* (Newport, U.K.: CAiiA, University of Wales College, 2000).

2. Webbed Feats's *Bytes of Bryant Park*: <<http://www.webbedfeats.org/prod/home.html>>; *Progressive 2*: <<http://www.webdances.com>>; *M@ggie's Love Bytes*: <<http://www.notam.uio.no/~amandajs>>. Other projects that involve the participant interactively in creating dance include Globz's *Interactive Dancer*: <<http://globz.net/globz>> and Roberta Shaw's *Dance for the Fiberoptic Planes*: <<http://www.cgri.ohio-state.edu/interface/S96/shaw4.html>>, but these both follow similar approaches to the web sites selected above. Richard Lord has produced several interactive dance projects on his Web site, but those with which a participant can physically interact are similar in nature to *Progressive 2*, so only the latter has been chosen for analysis.

The analysis of *M@ggie's Love Bytes* in this study took place in two stages, as the site presents only real-time performances. Initial analysis was based on the description available on the web site. The work was then viewed over the Internet and in a live theater performance. Both stages of the work have been analyzed in this study, as there were some discrepancies between the anticipated situation and the actual performance.

3. The specific aims of the artists who have constructed these web sites may differ from each other and from the purposes of this study.

4. P. Abbs, "The Pattern of Art-Making," in P. Abbs, ed., *The Symbolic Order: A Contemporary Reader on the Arts Debate* (London: Falmer Press, 1989) p. 204.

5. P. Hanstein, *On the Nature of Art Making in Dance: An Artistic Process Skills Model for the Teaching of Choreography* (UMI Dissertation Services, 1993) p. 139.

6. The web site did not give instructions for when to start or stop, but these were given verbally to participants, as the concerns of this study are with the dance-making process rather than the solving of technical problems.

7. *M@ggie's Love Bytes* performance, The ARC Arts Centre, Stockton-on-Tees, U.K., 23 January 1999.

8. Post-performance conversation with Amanda Steggell, 23 January 1999.

9. E. Hinkle-Turner, "Coming Full Circle: Composing a Cathartic Experience with CD-ROM Technology," *Leonardo* 32, No. 1, 49–52 (1999).

10. Popat's *Hands-On Dance Project* extends the model described above, exploring options for combinations of asynchronous and synchronous participant involvement and other methods of employing a variety of Internet communications technologies to facilitate the dance-making process.

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