Avatars – can they help developing personality among students in school?

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Consequences of connecting the physical world with interactive 3D-Worlds to hybrid experience and acting spaces to promote sophisticated social behavior

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Abstract - Are you wearing clothes from Nike, H&M or Esprit? Tongue, eyebrow or bellybutton piercing? Tattoos on the upper arm, shoulder or lower back? Image is so important, and not only nowadays. Identity has always used the body as its primary source of reference.

Today, there are new possibilities available to each individual through MUDs (Multy-User-Dungeons or Multi-User-Dimensions) with their avatars in 3D-Internet simulations to create their identity. The individual personality is not only staged though outward appearances (e.g. clothes), material goods (e.g. cell phones, furniture, cars), and social behaviour, but also their presence and activities within virtual spaces. Generally, the environment of MUDs are dubious, from a ethical or moral point of view, for developing personality since there is no bridge existing between physical body and identity. Still, it is possible for avatars to play a positive role in developing individual personality and social behaviour if a bridge is built within the self-designed hybrid (virtual and physical) experience and activity space. This theory is supported by the result of the ArtDeCom [1] project, which combines theory and practice of integrated arts, design, and computer science in education.

I. PERSONALITY, STAGED IN PICTURES

Even though our cultures proclaim that the important values of men and women are the so called "personal qualities", it is still obvious that outward appearances play a major role for the personality of the individual.

We build a picture of the world and we stage our self (our personality) more and more by pictures [2]. Recently, a greater extent of people – mostly children and teenagers – adopt shapes as avatars (three dimensional representatives) as a personal expression. They start to communicate and act with others in increasingly complex 3D-Internet worlds. Many millions of people meet daily to flirt, kill, and conquer each other in form of avatars in MUDs (Multy-User- Dungeons) in virtual towns and worlds which exist in the Internet.

As a consequence of the changes in real communicative relations and technology (e.g. mobile phones, text message, Internet chat, and MUDs), our concept of self and all its synonyms (e.g. identity, individuality, mind, and spirit) change as well. If a person is linked to a tangible body, and so anchored to the physical world, "self" is a fixed fact; though some "virtual" element also exists. The assumption of self is increasingly an inter-subjective realization of the relationship between "you" and "I". There is no doubt that special and temporal separated people, move together (approach existentially) to realize each other by means of the new communication media [3].

Fig. 1. Practice and acting out of stereotypically social behavior in the MUD *The Sims2* - predominately by female users (screenshot)

Therefore, it is understandable why pictures dominate the world and why MUDs (besides commercials and TV-soaps) play an increasing role in shaping the identity and social behavior of children and teenagers [4].

II. PERSONALITY FORMED BY VIRTUAL SOCIAL BEHAVIOR

From a historical point of view, social behaviour was predominately constituted by real, physical contact within the social community of others. However, in the last decades, mass media played and plays an increasing roll in the formation of, that what we call, personality or personal identity. Sales promotion and propaganda are accompanied with mass media (e.g. print, film and TV); and this molds the behavior of people. The interactive experience in MUDs surpass the classical mass media.

Inquiries have shown, "that children who have a preference for and play aggressive computer games demonstrate less pro-social behavior, such as donating money or helping someone [5]."

Fig. 2. Trying to rack up the most amount of "kills" in the virtual world of *Counter Strike*

Fig. 3. Practicing of early ethical and moral standards
(i.e. on Middle Age level) by predominantly young males
in the MUD *Dark Age of Camelot* (screenshot)

MUDs mold social behavior. This is most evident with players of the ego shooter (e.g. *Doom* or *Counter Strike*) genre. The children are obsessed with violence and trying to rack up the most amount of "kills". In

MUDs like, *Dark Age of Camelot*, or even, *The Sims Online*, the children and teenagers internalize behavior. In the programmed worlds, superficial behavior patterns are propagandized and they are detached from behavior linked to the physical world and multi-sensory experiences.

Sophisticated ethic or moral behavior patterns are cultivated. Only experience, linked to one's own physical body, enables the construction and the evolvement of self-dependent behavior in correlation to others (as individual social beings). Children and teenagers should have the possibility to reflect about their behavior in the real world: a world which incorporates the digital media.

Fig. 4. Avatar of a 9th grader

III. INTERVENTIONS IN CULTIVATING PERSONALITY

Schools and other educational institutions are linked to humanistic tradition. Students should be encouraged to be free, independent persons, capable of social behavior with sophisticated ethical and moral standards. We should not ignore the computer game industry and how it is influencing social behavior. We must offer teachers the tools to teach children how to deal with digital technology which cultivates personality. These tools incorporate the virtual and physical worlds the children are confronted with outside of the schools.

With the model project *ArtDeCom* we developed, tested, and evaluated how students can design and program interactive 3D-worlds and avatars, based on objects and events within physical space. Teachers, researchers, and school children collaborated in various projects from conception to realization.

Fig. 5. Large staged projection of an interactive 3D-world on a building in town, created and inhabited by 9th graders.

The realization were hybrid environments where the digital 3D-world were projected back to the physical world. They created avatars and 3D-Internet worlds using a multiplicity of freeware, shareware, low cost software, trial versions, and beta versions. The combination of the programs: PhotoModeler Lite [6], Teddy [7], ViewPoint Scene Builder [8], AvatarLab [9], and Atmosphere [10], enabled the students not only to create themselves as avatars, but to create spaces to instigate social contacts beyond stereotypes.

Fig. 6. Social interaction in a self designed virtual space, projected in real space.

Point of origin is always the own body and the real physical environment.

Fig. 7. Portrait of a 9th grader

Since it is important for children not to get lost in the anonymity of the net, we projected the digital world back into the physical. Sensors and actuators were used to build a tangible bridge between the digital world and physical world. Sensors (e.g. picture recognition sensors) linked physical space with web-based interactive 3D-worlds in a hybrid environment.

Fig. 9. Interactive spider within a hybrid forest environment (9th-grader of the IGS-Schlutup, Germany, 2002)

In a new project, *KiMM* [11], a JAVA application (including *vfm*) will create events (e.g. object movement) within a virtual space (e.g. Adobe Atmosphere).

Fig. 8. Picture recognition with a LEGO-Cam sensor (e.g. *vfm*-Vision for MATLAB, which is based on *Vision for Windows*)

Behavior in the virtuality of the Internet can be transferred to physical space by making the JavaScripts (e.g. JavaScripts for Atmosphere) accessible for microcomputers (e.g. the RCX by LEGO with the software RoboLab). Micro-motors and other actuators make Internet space tangible within the hybrid environments.

IV. FURTHER EDUCATING TEACHERS AND UNIVERSITY STUDENTS

In order to enable teachers to incorporate methods mentioned above, we suggest the following six points:

First: Teachers must seek to understand the world of their students. Particularly those aspects concerning digital media (e.g. mobile phones, InterNet, computer simulation). They should examine the phenomena where the virtual and material overlap: where the experienced reality is appreciably subjected by the medial organization of reality.

Secondly: The teachers should use the possibility of reflecting on the hybrid culture, i.e. the appreciably changing relationship between people and their environment. This reflection should be used for introspection [12] in instruction.
As environmental beings, we are dependent on the development of opposite horizons (e.g. abstract information, symbols, media, technology), in order to collaborate with them. Hybrid learning environments are particularly suitable for differencing and augmenting and dealing with the relationship between system and subjectivity, structure and participant, code and Expression.

Thirdly: Teachers should learn to interconnect equally "traditional" and "new" media, methods, and teaching concepts.
Teachers should not launch blindly into the new media and use them in isolated environments, but rather in hybrid learning environments. This encourages a balance between both traditional media (e.g. blackboards, pin walls, physical models) and new interactive media (e.g. the 3D-Internet, sensors, and picture recognition).

Fourthly: The teacher's major goal should be to extend their communication with their students beyond just mediating information. They are accountable for the moderation of the mutual communication processes of the students. They should create learning situations where the students can learn on their own or use the teachers as advisors in a peripheral manner. In addition, the task of the teacher consists of creating references to real life situations with media-based instruction arrangements in hybrid learning spaces.

Fifthly: Instructors should expand their competence for learning consultation.

The substantial task of the teachers consists of promoting the students' competence of self organization, self learning, self-discipline, people and communication skills [13].

Sixthly: The further education programs and university study programs should encourage teamwork between teachers and schools.
They should create better learning conditions, by organizing projects in hybrid learning environments. This requires a reorientation on the part of the teachers and a change in the school system.

V. SUMMARY

The sole use of digital communication and interaction media can be counter-productive for the development of the personality and the learning skills of students. This is particularly true with regard to the common use of Avatars in 3D-Internet worlds (MUDs).

Teachers should be able to offer students at their schools the possibility to produce hybrid learning spaces.

This encourages the students to reflect upon digital representations of themselves, deal with social identity within the phenomenon of digital worlds in context to their own physical environment.

In order to give teachers the ability to make this possible, it is not enough to teach them solely the current use of digital technology. Rather, they should learn, the why-and-how of hybrid learning spaces and their importance for school education.

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[5]   Kaveri Subrahmanyam et. all (2000)

[6]   Free Lite version of PhotoModeler, a program to digitalize real objects, by using photos of the object.

[7]   Teddy is a free application for drawing digital 3D-Objects.

[8]   We used the ViewPoint Scene Builder as free applications to convert objects, created wit Photo Modeler Lite or Teddy, to ViewPoint standard. It is also possible to rework them.

[9]   At that time free for members of the Atmosphere-Afterlife Community. Today a low cost program to create avatars with different moving patterns.

[10] Free download as beta-version. Application to create web-based interactive, 3D-worlds. Today purchasable as education license as 1.0 version.

[11] Kids in Media and Motion. A Project by the University of Luebeck, Germany.

[12] Manfred Faßler (1999), p 254

[13] cp. Sacher, W. (2003), Neue Medien – neuer Unterricht? Vorschläge für ein didaktisch-methodisches Konzept und praktische Beispiele. In: Schulpädagogische Untersuchungen Nürnberg, Nr. 19, p 24