

## ***Interactive comment on “Synthesizing the face-to-face experience: e-learning practices and the constitution of place online” by J. Maintz***

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Second part of the final author response

– please find the beginning of the text in "Final author response, part 1"–

### 1.3.5 Computer-assisted theoretical coding

I analyzed data resulting from the online phase (including the group discussion), and data obtained through questionnaires, interviews, and participant observation. Sustained by qualitative software Qualrus, I administered and analyzed these data by theoretical coding.

Coding aims at abstracting data for categorization and/or theory building purposes. The coding strategy adopted in this study is based on theoretical coding as developed by Glaser and Strauss, 1967, Glaser, 1978, Strauss, 1991 [1987], and Strauss

and Corbin, 1990. Theoretical coding comprises three coding logics: open coding, axial coding, and selective coding. The researcher may apply these logics in parallel. Usually open coding is used in the initial phases of the research process, selective coding in the final phase. Coding breaks down information complexes in pieces, and recombines these pieces in content groups subsumed under the respective codes (Strauss and Corbin, 1990: 57). Continuous abstraction of information in coding intervals regroups data material. Codes and corresponding information segments can be reorganized under a new logic when identified as belonging to meta-categories. The researcher identifies relations between categories on a horizontal level and between categories and meta-categories by relating to the subsumed content groups. Theory building results from the analysis of category-and-relation-grids.

Open coding refers to the procedure of dividing text in semantically useful segments and assigning these segments with codes. Referring to the research question(s), the researcher subsumes segments under categories, and in a next step more abstract meta-categories. Codes can either result from the literature (constructed codes) or be adopted from informants (in-vivo-codes). It is preferable to use in-vivo-codes when possible in order to stay close to the empirical material. A list of codes, categories, and meta-categories and the ordering of subsumed characteristics, phenomena, or processes and their interrelation should result from open coding.

Axial coding refers to the refinement of categories, in other words the exploration of its semantic extensions. The researcher filters out categories that show most resonance within the empirical material in terms of perceived importance, intensity or frequency and/or seem to address the most relevant phenomena in relation to the research question(s). Next, the researcher examines the empirical account for more instances that would belong to the identified categories. In this process categories are nurtured with empirical content and their boundaries explored in relation to other category fields. This implies both, induction in the development of concepts and their relations as well as deduction when verifying these concepts with reference to the empirical account. Axial

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coding results in a compilation of the most relevant categories for the research context and a selection of representative text references that mirror the width and diversity of each category.

Selective coding means axial coding on an advanced level. The target of selective coding is the identification of the main category of analysis of the whole research project and its corresponding phenomenon. Once identified will the researcher subsequently describe this main phenomenon and its interrelations with other coded phenomena in detail.

I consider coding an analysis procedure that can be productively combined with the actor network approach. Key elements of the observed e-learning interactions can be identified by using this method. Moreover, relations between key elements and enacted qualities can be accessed. In this research, I practiced the described coding strategies sophisticated by the use of qualitative software 'Qualrus'. In addition to data organization, this software includes analysis and theory-building features based on segment coding.

In order to analyze the diverse data spectrum collected in the course of this study, I administered all digital text data in Qualrus. Next, I coded all data by theoretical coding. I started the coding process by open coding. The selection of codes was motivated by relevance to the research questions asking for course interaction elements, their characteristics, and interrelations. I selected in-vivo-codes as well as constructed codes. Axial coding allowed for the filtering of the most relevant (meta-)codes to the research questions. I judged on the relevance of meta-codes in relation to the number of instances of being named explicitly or implicitly. I subsumed codes under the respective meta-codes in the process of open coding. Instances of codes added to meta-code-related numbers. Using this quantitative procedure of addition wasn't followed by a quantitative understanding of resulting scores. Instead, I understood high scores as indication of relevance of the respective meta-code within the empirical context. High scores were always understood as relative results. I judged on the relevance on a

high-score meta-code by analysis of its semantic content. In order to do so, I reviewed text segments subsumed under a code regarding the perceived importance of the contents as this was expressed or indicated in participants' statements. A next step of the axial coding strategy was to re-examine the empirical material for more segments referring to the group of most relevant meta-codes. This procedure was followed by a new ranking of meta-codes by relevance. The final step of axial coding was to analyze the empirical material covered by the most important meta-codes in terms of describing their facets (or sub-codes).

I undertook selective coding for the category 'place', as this category proved to be within the group of most relevant elements. I undertook the selective coding procedure equivalently to axial coding, focused on this one meta-code ('place'), and thereby highlighted its interrelation to other semantic code fields.

When analyzing the interrelations between codes with reference to relating text instances, I applied Qualrus search tool for individual and co-occurring codes. The application of these tools leads to the number of results of occurrence or co-occurrence of the respective codes in the data material. Moreover, lists of instances of the respective codes in the data are provided including hyperlinks to the text segments concerned. These features allowed for the frequent shifting to source segments when I identified the associative fields covered by codes and their interrelations.

### 1.3.6 Data and methodological triangulation

Two types of triangulation are relevant for the present study: data triangulation and methodological triangulation (between-method; Denzin, [1978] 1989: 237-238). I undertook data triangulation in this study through the systematic collection of data at different places (online in the different synchronous and asynchronous forums of the cooperative virtual environment and face-to-face at the Pretoria workshop) and at different points in time (regularly during the half-year-online phase through participation at the course program, and intensively during the ten days of the second face-to-face

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workshop). Second, I applied methodological triangulation through the combination of different methods: Participant observation, questionnaire, interviews, group discussion as small group chat. I compared the resulting data (my active data collection) with data produced in the diverse online forums. The latter data have been produced in regular course interactions. I analyzed all these data by coding and compared, contrasted, and enriched findings discovered through each method with the group of diverse data sources.

1.4 Finally, referee 1 writes: “[W]hat differences are drawn by the different types of co-presence - for instance what is the difference between ‘synchronous co-presence face-to-face and asynchronous co-presence online’ and ‘parallel synchronous co-presence face-to-face and online’ (p. 14)?

Response: ‘Synchronous co-presence face-to-face’ describes a face-to-face co-presence exposure. ‘Asynchronous co-presence online’ refers to the case of an online environment, which is shared by various users. The shared environment and archived text contributions facilitate a sense of shared presence in the same environment, however, users can actually be present time-shifted and contribute asynchronously to the shared data. ‘Parallel synchronous co-presence face-to-face and online’ refers to the case of synchronous presence of more than one person in physical environments and at a time in online environments.

The list of the different forms of co-presence served as information for the reader regarding the variants of co-presence facilitated by face-to-face interactions and synchronous and asynchronous communication tools. Depending on the exposure of learners to (accumulating) synchronous or asynchronous activities affording co-presence, they were not able to meet all interaction requirements.

## 2. Anonymous Referee 2

2.1 As Referee 1, Referee 2 asks for a detailed description of the empirical procedure and methodological background of Hine’s (2000) approach of “virtual ethnography”.

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Response: I thank referee 1 for this very important comment. I have answered this question in response to referee 1, section 1.3.

2.2 Referee 2 argues that synchronous e-learning events would not necessarily have to take place in the form of face-to-face interactions in physical environments. Instead, they could also be organized as telephone or video conferencing sessions.

Response: I absolutely agree with referee 2 on this point. In addition to synchronous online interactions in the form of chats as applied in the studied empirical case, both telephone and video conferencing would have been viable as synchronous interaction media. However, voice and video over IP are technologies requiring reliable broadband connections and not necessarily easy to access in developing countries. This was the reason why the studied e-learning program organized by InWEnt/ Capacity Building International did not integrate the use of these technologies in the course context. I agree that it would have been interesting to compare the use of the synchronous interaction technologies of voice and video over IP to synchronous interactions in the form of chats and face-to-face meetings, however, I chose to limit my discussion to my empirical findings. Moreover, the prime intention of my paper was not to give an overview on e-learning technologies, but to analyze translation processes in between physical and online interaction spaces. The blended learning course served as a relevant empirical case in this context.

### 3. Anonymous Referee 3

3.1 Referee 3 mentions the deficit of my paper to not have clearly defined the notions of 'physical space', 'physical environment', 'face-to-face environment', 'geometrical (Euclidean) space', 'cultural environments', 'online space', and 'online environment' (p.23).

Response: I agree there is a need for a definition of these terms. When using the different notions of 'space', I relate to a topological understanding of physical and online spaces. When using the different variants of 'environment', I refer to contexts of social interactions. When speaking of 'physical', 'online', 'cultural' environments, I intend to

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stress the respective qualities of these interaction contexts, which would influence social practices. The notion of the 'face-to-face' environment relates to a physical interaction context, which is characterized by the immediacy and spontaneity of a face-to-face exposure.

3.2 Referee 3 writes: "I am not sure which 'object' and its (shape) constancy should be observed. That refers in the same manner to the notion of presence and absence of the "fire space" in the chosen example. [Ě] But what is the "object" in the case study? Obviously it is the "place" itself, which is "constituted online", as the title of the paper suggests. In my opinion this place is a 'social place' that is defined by the co-presence of the participants, only partially connected to physical locality and for the most part connected (or is even congruent) with "online workspace". But what is the simultaneous absence, of which the constancy of this place depends on? If I understand the argumentation well, both the joint face-to-face experiences (mobilised as memories) and third persons ("distant others") or narratives about the environment of singular participants count as 'absent objects'. It is not clear to me, whether this really deals with "absence" in the sense of Law's and Mol's fire space - in my reading that is hidden (!) conditions, which enable constancy of the observed object - and whether the corresponding objects could be mobilised in a network topology just as well. Finally I did not comprehend why Maintz sums up, that in her understanding "'place' was a mutable mobile defined by changing composition in its constitution in physical space versus online space" (48/14-16)". According to the diction of Law and Mol (2001: 620) "mutable mobiles" correspond with the metaphor of "fluid space" while "mutable immobiles" correspond with "fire space" (p. 23-24)."

Response: I thank referee 3 for this very thoughtful comment. I would like to point the reader to the answer to the comments 1.1 and 1.2 of referee 1 who has asked for related clarifications. Moreover, I would like to add the following: Law and Mol (2001: 620) write: "A paper, then, this paper, exists within the space of fire- the space of conjoined alterity. Which means, finally, that it is also a mutable immobile. It is four

things, located in four spaces: region, network, fluid, and fire.” I would like to stress that Law and Mol write that the observed object would “also” be a mutable immobile. My perception of this discussion of actor-networks is that actor-networks (including “objects”) can manifest themselves in various spaces. In my reading, fluid and fire spaces refer to composition logics of actor-networks that are defined as topological formations. The defining criterion of an actor-network characterized by a fire spatial logic is the “shape as an effect of discontinuity. As with fluid constancy, movement rather than stasis is crucial. Without movement there is no consistency. The difference I that, whereas in fluidity constancy depends on gradual change, in a topology of fire constancy is produced in abrupt and discontinuous movements (Law and Mol, 2001: 615)”. When discontinuous element influence is characteristic of a topology, then the temporally ‘absent’ and ‘present’ elements can be imagined as integral parts of the topology, as they are co-constituting the topology. However, as they are also temporally absent, i.e. not influencing the element interrelations forming the topology, they can logically equally be considered as not forming part of the topology. This means that this topology would then constitute a mutable mobile defined by a changing element composition. When relating to shape constancy, I am referring to the shape constancy of actor-networks, topological structures. In this paper, I refer to the shape of the relationally produced actor-network ‘online space’, which is characterized by fire spatial impulses from the second topological formation ‘physical space’. By the mechanism of fire spatiality, elements of the topology of ‘physical space’, if absent ‘other’ to the online topology, sporadically interfere in the very constitution of ‘online space’. By way of these translation processes between the two topologies, a social place is constituted online.

3.3 Referee 3 writes: “Perhaps some of the understanding of these issues would be made easier with the help of hypothetic conclusions: How would a place be constituted online without any face-to-face contacts and/or with reduced possibilities to mobilise “distant others” in their “physical environment”? Or how would a place be constituted online, if face-to-face contacts would be simulated by video conferences?”



Response: Please see response 2.2 answering to the related comment of referee 2.

3.4 Referee 3 encourages a detailed description of the empirical procedure.

Response: Please see response to referee 1, comment 1.3.

3.5 Technical corrections

Response: I am happy to insert the technical corrections suggested by referee 3 in my paper.

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