Educating designers in virtual space: A description of hybrid studios

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Abstract: *Little is known about how design learners experience competence development in alternative, hybrid design studios. The research reported here explored the development of learners' competences in distance design education in a longitudinal qualitative study. Learner biographies were recorded through repeated interviews and analysed using a narrative, grounded theory approach. The paper discusses emergent themes such as phases in development, roles of learner autonomy and learning groups, crisis situations, and expert dialogue. It presents the hybrid studio as an intersection of internal and external factors in distance design learning. The paper goes on to suggest a taxonomy of virtual design learning, teaching, and educational theory that may aid educators in the design of hybrid design learning spaces. It suggests is a design didactic concept that combines the theories of creative processes with the media didactic contexts of a development-centred design pedagogy. The work concludes with the proposition that study programmes should be developed based on competence and personality. This experience-centred didactics is a prerequisite for the success of digitised educational systems.*

Keywords: *virtualisation, design didactics, hybrid studios*

1 Introduction

In the educational biographies of designers, there are a multitude of key moments that leave their mark on the self-concept of the designers and thus on the styles of their designs. One such key moment for many designers is the first crossing of the threshold into the Art Academy after passing the entrance examination and the architectural impression of the university building. Project discussions with lecturers in the workshop or in the studio are further moments that have deep effects on designers.

But what are comparable moments of such threshold experiences for design students in a virtual setting? How does the creative learning process change when designers study at a distance? Has the creative process as such changed under a virtual framework?

The German educational landscape in the design sector is still characterised by classical studio learning. Teachers and learners come together in the physical framework of a university. In most cases, training is provided towards a practice-oriented bachelor's degree.

The didactic principles of design education lead to learners' personal development beyond technical and artistic competencies. This multidimensional pedagogical goal is expressed in the German term *Gestalterpersönlichkeit* (best translated as 'design personality'). This personal

development is the basic idea behind the courses offered at German design universities. Thus, the educational challenge of design teaching is to develop learners at a personal level in parallel to developing the creative repertoire of the learner. In this respect, developing the designers' design actions[1] is an essential goal of the German study programmes.

In contrast to the traditional design education settings, distance learning in design is a small niche in Germany and offers design education to a smaller group of atypical students.[2] But we don't know how the *Gestalterpersönlichkeit* develops in these programs. For the first time in history, it possible to observe whether and how competence development and personal development takes place in a virtual design learning environment.

This has led to the following research questions:

1. What are the internal (intended by the curriculum), external (informal as well as self-study) factors that influence design competence development in virtual design education?

2. What specific requirements does hybridisation of physical and virtual learning spaces bring to design didactics in part-time design studies?

The following sections describe a qualitative study that has been carried out to address the above questions on personal development and development of competencies of distance design learners in Germany. The findings contribute to our understanding of the impact of alternative studios on design competence development.

2 Methodology

2.1 Setting

The setting for this research was the Diploma University in Germany. The Diploma University was created in 1994 as a distance learning university in Germany, where the principle of distance learning has thus represented a core concept of teaching and learning for more than 20 years. Since 2012, students have been taught digitally using a blended learning model. Currently, 800 students study 'Graphic Design (BA)' and 'Creative Direction: Management in the Context of Creative Processes (MA)' in the Department of Design. The bachelor's program in graphic design is

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[1] 'The aim of the course of study is to prepare the student for a professional field of activity and to impart to them the necessary specialist knowledge, skills, and methods for the respective course of study in such a way as to enable them to carry out scientific or artistic work and to act responsibly in a free, democratic, and social state governed by the rule of law' (Framework Act for Higher Education, published 19 January 1999, (BGBl. I, 18), last amended by Article 2 of the Act of 12 April 2007 (BGBl. I, 506); § 7).

[2] This 'atypical' group of students who are not of the classic type, defined as 'between 19 and 24 years old, Abitur, childless, coming from Germany and studying full-time in attendance' (Jens, Müller, and Röwert 2017, 7) accounts for 6.7 percent of students studying at a private university in the winter semester 2014/2015. Within this group, the field in question represents a group of a maximum of 1,000 persons. This niche is filled by private providers with distance learning models tailored to the needs and opportunities of professionals, persons with family responsibilities, and other people with a desire for qualifications and a professional or family background. The providers surveyed solved the profile of part-time study with a significantly high proportion of self-study, in which study books and video tutorials replace the classic lecture and project work is the central teaching format. A small part of 20 percent of the total workload time is added to the contact times in the form of virtual lectures with the Adobe Connect software on Saturdays and evenings.

offered both face-to-face and virtually; the master's program in creative direction is offered exclusively through a virtual model.

The virtual courses at Diploma University are delivered synchronously. Presentations or lectures are transmitted in real time. Learners contribute to discussions and can get directly involved, ask questions, comment, discuss, and collaborate. In self-study mode, study books and video tutorials replace the classic lecture, while project work is the central teaching format in any mode. Teacher–student contact time comprises about 20–30 percent of their study hours; contact usually happens in virtual lectures and seminars on Saturdays and evenings.

2.2 Data collection and analysis

Since 2015, guideline-based interviews have been conducted within the framework of evaluation research in the bachelor's degree course in Graphic Design at Diploma University, and since 2016 in the master's degree course in Creative Direction as well.

A qualitative methodology was used to answer the research questions. Interviews investigated the effects of the curricular and didactic environment of the then-new virtual design study on the personal development of novice designers. Using a biographical survey approach, the evaluation research sought insights for the optimisation of the study program. Since these biographical conversations could be used to develop concepts beyond evaluation in an educational-theoretical sense, the interviews became the doctoral research project 'Virtualised distance learning in design disciplines'.

Figure 1 shows a graphical overview of the research process. Narrative data from guideline interviews (Mayring 1999) were collected from 18 informants in 30 encounters during their studies.[3] The recordings of the conversations were literally transcribed according to uniform rules and evaluated using qualitative content analysis with the aid of the MAXQDA software (MAXQDA 2017). The main analytical approach was that of condensation. In the research style of *grounded theory* (Strauss 1998), the narrative interviews were evaluated and examined for the concepts of 'design actions'. Codes were developed from implicit concepts in the informants' utterances. The development of personality cannot be investigated through direct questions. The students merely notice changes in their patterns of perception and action. Therefore, the study looks for changes in internal and external behaviour that are reflected in the biographical reports. Additional memos with first reflections and between-the-lines observations were recorded for each individual appointment.

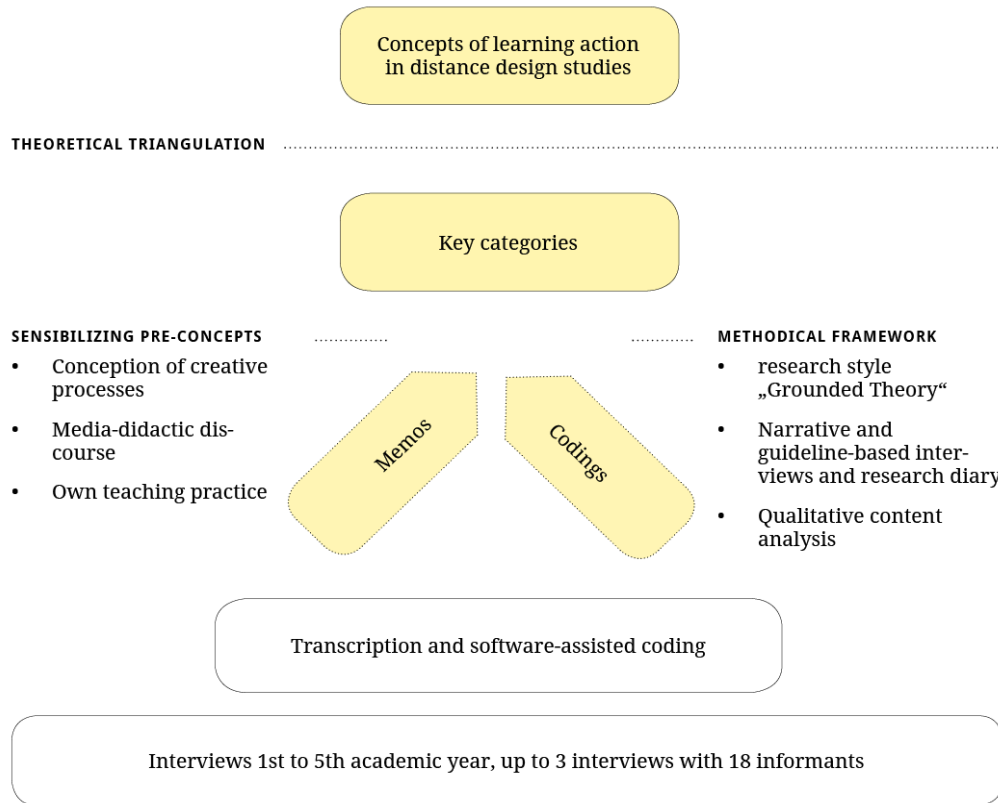[3] An overview of the informant structure can be found in Appendix 1.

Figure 1: Data collection and analysis process

To triangulate the findings, we asked two other universities with comparable degree programmes for interview partners. The Open University in the United Kingdom was one partner. Interviews with seven participants from the 'Design & Innovation' programme at the Open University were conducted in 2019. This program is structurally comparable and offers the possibility of a counter position in theory building.

3. Findings

We're all sitting in our little bubble. The other fellow students aren't in my life and vice versa.
(Transcript 4-1, par. 5)

In this quotation, the general distance and isolation of the students can be read. The observations are essentially concerned with how the students perceive this isolation and utilise it to inform their designing.

3.1 Phases in virtual design learning

Different phases of competence and personal developments can be seen in the first three years of study.

3.1.1 Initial study phase

The nature of distance learning makes it necessary to rededicate times and spaces for learning that were previously used primarily for family and private purposes. In this sequence of spatial and communicative changes in the student's environment, a 'status passage' arises. In this status

passage, the students acquire their new role as students through a high level of personal activity. This is a distinction from traditional study systems in which the status passage is assigned via external symbols such as award acts, celebrations, or other initiation rites.

> *…about 25, just over 25 years ago, I started a degree course in a bricks and mortar university. But I didn't finish it. And so, I felt that I would like to go back, and I was, ja, still in design.* (Transcript 17-1, par. 6)

In this phase, the students gain the self-concept as students. This process is a communicative and symbolic challenge due to the heterogeneity of the study groups. Students with hardly comparable professional backgrounds and study motives, as well as age, meet each other and have to form a group identity.[4]

Table 1

Dimensions of the identity construction of learning actions in design distance learning

Condition	Interaction	Tactics	Result
There is a mutual interest within the virtual learning group.	Members exchange and acknowledge developments that influence their mutual images.	Works are made visible and a reciprocal registration of ideas can be observed.	There is solidarity among the group. The learners become part of a virtual community.

Source: (cf. Strauss 1998, 57) [5]

At this point, the distance of the study proves to be an opportunity. The learners contact each other through the visualisation of their work using digital media. So, they get to know each other independently of the traditional social processes through a subject-specific exchange. In this way, learners become part of a 'community of practice' (Wenger 1998, 19). Here, a high level of individual activity can be observed, because this integration is largely achieved through media visibility. The heterogeneity of the group, together with the differentiated inner professional exchange, brings about the first social benefit, about which many informants express their surprise:

> *…people felt they're not [the only ones] doing it in their bedroom—other people are doing it, and just a sense of camaraderie sort of thing, that we're all in the same boat. You can then recognise people on the forum and put a face to a name.* (Transcript 20-1, par. 46)

Relevant in this status passage is the contrasting ambition towards design studies: on the one hand, the cold ambition is noticeable in the reports, in which students primarily strive towards a qualification. On the other hand, a warm ambition is visible, which is more driven by emotional motives of self-realisation.

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[4] The process of group formation becomes an important criterion for the social development of the creative repertoire in the following two academic years.

[5] The technique of dimensionalising is based on the methodology of qualitative social research according to Strauss (1998, 57), and observes in the data 'conditions, interactions, tactics, and consequences' the construction of identity.

The progression and complexity crisis[6] falls in the first year of studies. The concept of crisis takes on an important second meaning in this research. At the centre of a conception of the creative process, crisis[7] is an experience of rupture 'at which movements break in or out and something new opens up' (Waldenfels 2002, 239). This newness is an artistic response and thus a reaction to the initially passive exposure to this experience. In this sense, crises are a necessary prerequisite for the creative development of learners. Here, too, it can be seen that design learning in distance learning depends on a high level of activity and learners' ability to structure design activity themselves; students are often on their own when it comes to creative questions. Due to being geographically distant from the instructors, students are forced to base their design on their own creative decisions. Their ideas must be visualised so that they can be discussed with a lecturer or fellow students. Due to this isolation, an important first creative competence is created.

3.1.2 Second academic year

In the phase of the second academic year, the *cold* ambition focused on gaining the university degree is not sufficient to motivate for a part-time course of study. To counteract, the students create a *warm* ambition of ideological significance to continue to meet the study requirements and to pursue their studies further. This change in mentality goes hand in hand with the *crisis of progression and complexity.* The students are confronted with an increasing creative challenge. In their second year of study, they can no longer meet these increased demands with just their intuition; they have to take other paths.

This *experience of tension* creates a break in the self-concept formed in the first year of study (Bosse and Trautwein 2014, 49) and represents the second major crisis after the first year of study.[8] This crisis is necessary to enable the *reconstruction of* identity; the students find new solutions for creative problems through this crisis, which results in an extension of creative-solution competence and thus an extension of the creative repertoire.

In the perception of the students, this new construction of identity runs parallel with the creative and formal-aesthetic extension of competence. Here, too, we can see the scheme of an extension of competence resulting from the *self-organisation of* learning. It should be emphasised that the experience of an ideological *significance* is the trigger for this personal development. The ability to self-reflect thus becomes the central concept of creative distance learning.

3.1.3 Third academic year

The experience of meaning as a result of crises is also evident in the third year of studies. Due to the renewed increase in design complexity, students are confronted with a further need for adaptation. In addition to the internal complexity of coordinating design projects with several people and across disciplines, a new challenge arises. This *tension* arises from questioning the designer's identity. In the final year of the course, students ask themselves whether and to what

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[6] In agreement with the research on the non-design introductory phase of studies.

[7] Κρίση, the ancient Greek word for *decision*.

[8] This 'first-semester crisis' coincides with findings from other departments and is a typical 'complexity crisis', according to Bosse and Trautwein, 2014, 49.

extent the project topics coincide with their self-concept, which they have acquired in the meantime.

What is relevant here is that the phase of undirected creativity and the unconscious creative phases (Dewey 1998, 41) play a role in the third development crisis.[9] The fit between the self-image and the works created is critical. The practical relevance plays a role here, as well as the simple question '*Is it good enough?*'. The learners negotiate these subjective areas of tension in the self-organisation of their learning. The students compare the professional applicability of the learning content with the *adaptation* to their self-image as designers that has been constructed over the course of the previous two years. The response to this need for development is perceived as self-care. In the following section, this is described as *expansive learning* (Holzkamp 1992, 8). This special form of design learning is highly autonomous.

3.2 Need for expert dialogue

> So…I would like to be told by someone who has been doing this for a long time, 'Watch out, graphic artists do it this way and that!' (Transcript 8-1, par. 30)

In the nature of distance lies the observation that the competences acquired in self-study are afflicted with uncertainty. The students want to reduce this uncertainty in their own learning within the institutional framework. This is achieved through dialogue with teachers.

The students evaluate the media for dialogue according to how helpful they are for their design projects. Students find the conversations with teachers and fellow students particularly helpful. The more specifically the learning media resolve design questions, the more relevant the students consider the respective learning medium to be. For the importance of knowledge resources, see Appendix 2. From this finding, it can be interpreted that the creative action itself is the centre of the acquisition of inner professional competences—thus, individual reflection and own activity are decisive in the dialogical negotiation of relevance.

The comparison between classroom teaching and virtual distance learning in design disciplines reveals a further difference. The dialectic between intuition and methodology, which has been established in design didactics since the Bauhaus era (Itten 1931, as quoted in Buchholz and Theinert, 2007, 74), is also evident in these self-organised distance-educational processes. Interesting are observations of how the experience of meaning and the unconscious part of creative processes are used in passivity to produce ideas appropriate to the respective self-image of the learners. In this crucial creative phase, students retreat inward, a behaviour that is a reaction to the complex design requirements.

3.3 Virtual design learning follows traditional creative concepts

This passivity is called *diastasis* (Waldenfels 2002, 174) in the theories of creative processes[10] and appears in the hybrid studio as a creative phase consciously produced by the learner. The motif of

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[9] This connection coincides with the concepts of the creative process, which emphasises the central role of the unconscious in the creative process through concepts such as *diastasis*.

[10] The process of appropriation and processing described as 'maturing' and 'diastasis' is also modelled as pre-reflective and intuitive. Here, too, different paraphrases can be found in the theory formation, which describe the temporal and spatial shift of

suffering, which also plays an important role in the theoretical concepts of creativity, is added to this phenomenon.

> *I already have the feeling that yes, I am somehow constricted, that something is around me, like a bowl like that and I have to break it, which is unpleasant, which is stressful, which is exhausting, but then I have more space again to just unfold in a creative way.* (Transcript 5-2, par. 115)

What is historically new about this observation is that the sensation of a negative tension occurs without a social friction, which is usually experienced and practised in studio teaching through regular corrective conversations (*crits*).

In this observation, the design didactic learning process emerges in harmony with learning theories from other subject areas. This consciously produced subjectivity carries the characteristics of 'incidental' (Birkenbihl 2013, 29–44) learning, a casual learning process, which is often experienced as trial and error. However, this in turn is the basis for a self-developed competence expansion, in which the individual learning need is determined in a design project and the required competences are developed, practised, and consolidated in an equally self-responsible learning action.

3.4 Virtual design learning as educational autonomy

> *...this freedom leads to...that the head or, yes, that the head is freer and therefore less pressure and therefore also the perception of graphic things, what happens in everyday life around, becomes bigger.* (Transcript 3-2, par. 2)

From a purely linguistic point of view it can be stated that up to this point, the prefix of '-self' (as in 'self-organisation' or 'self-responsibility') has gained great importance in our empirical observations. Thus, independent design learning becomes a central differentiation from traditional studio learning. In fact, it must be noted that the development of the designer personality is the result of a high degree of educational autonomy. A specific signature of the virtual creative distance learning can be seen in educational autonomy. Through distance education, learners have to make their own creative decisions, and they have to follow through with them and continue making new decisions throughout the course of a design project. For this reason, there is a great opportunity for design didactics, because in comparison to traditional studio learning, students gain greater creative decision-making authority. In this respect, early achievement of personal responsibility is a central creative competence developed within this framework. Last but not least, the decision-making competence in an increasingly virtualised and hybridised working environment of design is an essential cross-sectional competence.

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the received impulse. This inner process emphasises the conception of aesthetic perception as primarily pre-reflexive and as unwillingly controllable and constituted as bodily. See Waldenfels 2002, 174.

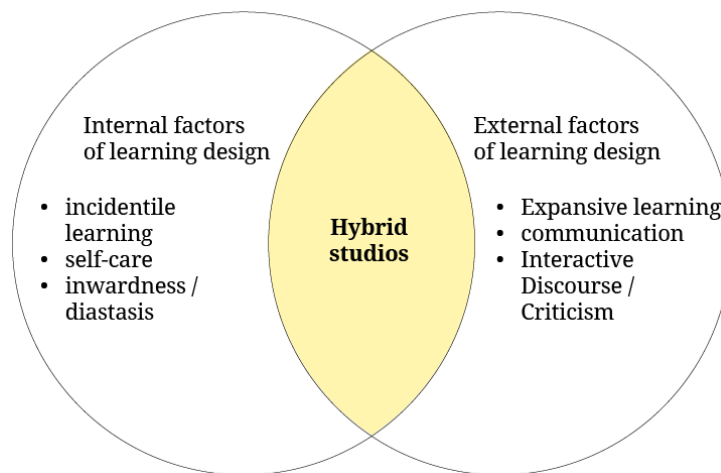## 3.5 In the hybrid studio, the virtual and the physical learning space overlap

Figure 2: Hybrid studios in the intersection of internal and external factors of design learning

The hybrid studio becomes a design didactic metaphor in which the internal factors of design learning overlap with the external factors, as seen in Figure 2. It becomes clear that the subjectivity of design learning also plays an important role here. The interaction with the outside becomes relevant only at the higher taxonomic levels. The narrative interviews show how aesthetic education proceeds without institutional influences. The self-organised study shows the status passage, and the crises of complexity and progression are also visible. What is relevant here is that the social processes play a central role in the formation of the self-image. The creative development with and within a learning group is therefore essential in a virtual framework. This is surprising insofar as these developments take place in a largely self-organised framework in hybrid studios.

4 Discussion

4.2 Change in self-concept

Figure 3: Changes in the self-concept

An important insight gained from this empirical work is that self-care as 'expansive learning' (Holzkamp 1992, 8) has the greatest effect on personal changes in virtual distance learning (Figure 4). This self-competence develops particularly in the second year of study as a result of adaptations to the increased study requirements. In contrast to traditional studio studies, students do not receive any external references to this status passage but have to produce them through their own reflections. This change is reflected in the interaction with the teachers. But mainly it is developed from their own, internal reflections. In addition, the changes are socially constructed—for example, by interacting with the members of the learning group or the social environment who provide feedback. In this respect, there is a duality between the internal and external factors in this change. The main part is formed by internal factors resulting from artistic actions and aesthetic experiences. These educational effects have impacts on the self-image of the person. These development goals should therefore be anchored at the module level as personal learning goals.

The smaller part is taken up by external factors that emerge as social constructions. These competence extensions arise as a result of expansive learning with increasing project requirements. Therefore, these are best formulated in explicit learning objectives so that the students can establish their overriding importance.

4.1. Quality criteria in virtual design learning and teaching

Drawing on these findings, I propose the following advice to educators. In the conflict situations in the creative development of the biographies presented here as examples, it is helpful to announce the respective learning goals and the associated tensions in tutoring as part of the cognitive process. Anticipated in the taxonomic stages the tensions of the complexity crisis in the first academic year, the fit crisis of self-image and external image in the second academic year, and the practical discourses in the third academic year. The learning counselling of the teachers plays a purely accompanying role.

In this respect, it can be generalised that there are asynchronous learning processes that have their own rhythms in each individual learner, even in a virtual framework. From a certain complexity, which then becomes important for the identity of the learners, the interaction with the group and the teachers is relevant.

From this observation it can be further deduced that the learning objectives, with increasing taxonomic levels, require a necessary social framework. According to the narrative interviews, it is irrelevant whether this framework is physically or digitally mediated. This connection is the real innovation for hybrid design learning.

The factors of virtual design learning and design teaching are summarised for the three levels (micro level of learning, meso level of teaching, and macro level of education theory) in Table 2:

Table 2

Taxonomy of virtual design learning, teaching, and educational theory

Phenomena and concepts	Micro level of learning	Meso level of teaching	Macro level of educational theory
Status passage	Space–time re-dedication	Anticipating symbolic changes	Virtual design study as an autonomous act
	Social communication	Encouraging exchange	
Events and crises	Experiment	Accompanying Passiveness	Learning as inwardness Passivity as a design didactic principle
	Autodidactic	Anticipation of the necessity of self-organisation	
	Self-reflection and self-care	Supervision	
Remoteness	Decision	Moderation	Self-sufficiency of a personal development process
	Expansive learning	Shaping discourse	
Hybrid studio	Push–Pull	Coaching	Semipermeability Passivity as a design didactic principle
	Diastasis	Anticipation of diastasis	
Identity formation	Expansion of the creative repertoire	Communicating the learning objectives	Co-production of identity and meaningful experiences
		Empathy and authenticity	Social construction of identity

For the educators, this means restraint on many levels. Educators and tutors should know about the self-organisational development phases. This also means that the typical crises must be accompanied empathetically as triggers for creative developments and that these crises must be understood as integral and productive parts of the studies. The study also highlights the development of decision-making competence as a personal contribution by the students themselves. 'Diastasis' is an inner and deeply subjective process that paradoxically (Lotz 2018) demands a kind of *active* restraint[11] from the teacher. Furthermore, it follows that educators in virtualised distance learning[12] need specific competence in coaching artistic and design processes (Truniger 2019, 32) in design disciplines. The study can only suggest this need as a desideratum, as this research has focused on the students' learning actions only. Therefore, there is a need for research to empirically elaborate the quality criteria of virtual coaching of artistic and design processes in the future. Further empirical work should be based on the findings presented here, and counterparts in teaching actions should be found.

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[11] The importance of silent social learning processes has been empirically highlighted in a study by Lotz (2018). In this paper, under the research question of social engagement in design studies, it is stated that there is a strong correlation in the upper third of a course, which is expressed by a high communicative activity in the digital learning spaces. This suggests highly communicative people achieve a high level of learning success. In addition, the study found another slight positive correlation: those who regularly view the work of others but do not comment on it also benefit from the passive follow-up of this work. What is relevant for the overarching research question is that this effect does not only affect the upper, high-performance third of the course but also affects the entire performance spectrum.

[12] In this respect, this micro-level of design didactics remains unchanged, because 'speaking', 'asking', and 'intervening' remain the principles of consulting in creative and artistic processes: 'This symbolic communication is about the "continuous exchange of values, attitudes, organisational and structural questions, production processes, quality standards and terminologies". In the broadest sense, the raison d'être of the system, the meaning and content of the grouping (...) are thus "linguistically understood and socially shared'. Truniger 2019, p. 32

5 Conclusions

For the design didactic conception of distance learning design courses, there must be a sequence of aesthetic experiences at the end of which personality development takes place. This is a consequence of the internal acquisition of competence, which is socially constructed by the students through interactions with fellow students, teachers, and others during their distance learning. Experiences of tension and crises are necessary factors in the creative processes that trigger this learning and adaptation, which naturally bears the signature of the virtual learning space that, as a hybrid studio, represents the specific style of study. This characteristic style produces self-confident and reflective designers. The distance of the hybrid studios brings with it an almost classical humanistic self-training that illuminates the central potential of virtual design theory. The design didactic framework presented in this study makes its integration into 'traditional' design theory promising and desirable. Researching alternative design learning spaces has relevance to building new design pedagogic theories. These new design didactic principles may also enrich traditional classroom teaching.

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