

Collaboration in Visual Culture Learning Communities: Towards a Synergy of Individual and Collective Creative Practice

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ABSTRACT

A visual culture learning community (VCLC) is an adolescent or young adult group engaged in expression and creation outside of formal institutions and without adult supervision. In the framework of an international, comparative research project executed between 2010 and 2014, members of a variety of eight self-initiated visual culture groups ranging from manga and cosplay through contemporary art forms, fanart video, graffiti and cosplay in five urban areas (Amsterdam, Budapest, Chicago, Helsinki and Hong Kong) were studied through interview, participant observation and analysis of art works. In this article, collaborative group practices and processes in informal learning environments are presented through results of on-site observations, interviews and analyses of creations. VCLCs are identified as inspiring, collaborative spaces of peer mentoring that enhance both visual skills and self-esteem. Authors reveal how identity formation is interrelated with networking and knowledge sharing. Adolescents and young adults become participants of global communities of their creative genres through reinterpretation and individualisation of shared visual repertoires. In conclusion, implications for art education from the VCLC model for creative collaboration are suggested.

KEYWORDS

visual culture, adolescent and youth art, informal learning, collaborative learning, intercultural comparison

Introduction

A visual culture learning community (VCLC) is an adolescent or young adult group self-organised around a visual culture interest and production (Freedman *et al.* 2013). The members of VCLCs engage in artistic production outside of formal institutions and without older adult supervision. The study of these communities is important not only because of the growing need to synergise formal and informal learning in visual culture, but also for better understanding social issues of educating urban adolescents and young adults. VCLCs offer means, methods and media to support the development of young people's identity formation through creative practice and engage them in active citizenship (Sclater & Lally 2013). Communities of visual culture, as catalysts of auto-didactic learning and peer teaching, can

significantly contribute to an emerging new pedagogical paradigm of the twenty-first century involving sociocritical approaches to art and design education outside of school (e.g. Freedman 2003; Herne *et al.* 2013; Hielt & Kushner 2013). The democratic practices of VCLCs may contribute to

schools transformation of, or engagement with, the physical space of classrooms, corridors and the wider community [and] can be a useful strategy for the artist teacher to investigate the collaged discourses of their particular context. The task is to involve others, whether colleagues or students as co-creators, and co-researchers and to extend the invitation to 'come and see' to others in the locality beyond the school. (Wild 2013, 297)

An international, comparative research project was conducted by the authors between 2010 and 2014, studying members of VCLCs in seven countries (Canada, Finland, Hong Kong, Hungary, the Netherlands, Turkey and the USA). The project has involved VCLCs who met face-to-face and online, each focusing on one of the following visual culture forms: manga, video film production, demoscene, street art, computer games, tabletop games, fanart, conceptual art, contemporary art, graffiti and cosplay. In a previous article (Freedman *et al.* 2013), we described VCLCs and discussed the auto-didactic and peer teaching activities of young people who belong to these groups, including their artistic and social practices.

Our previous article concluded with recommendations for educational practice based on VCLC functions, social interactions, work processes and sources of inspiration (Freedman *et al.* 2013). This article reports on the data collected about characteristics of collaboration, identity formation, the flow of knowledge in the VCLCs and multicultural aspects of their art. We expand the variety of VCLCs with new examples and focus on collaboration within these creative groups. We propose a theoretical framework for their activities, characterise forms and processes of their collaboration, illustrate how knowledge is networked, and discuss the relationship between local and global visual culture practices that support identity formation and flux.

Theoretical framework

The analytical framework used for interpreting positive social interdependence is a triological model of learning. Triological learning theory helps us understand how knowledge and artefacts are constructed in collectives. A central feature of this model is the process of acting around shared objects that change during the knowledge creation process. These objects become tools for mediating collaborative activities (Paavola *et al.* 2004; Lipponen *et al.* 2004). Learning that occurs as a result of internal reflection ('monological' approach) is self-guided knowledge acquisition characteristic of deep inner motivation. Classic concepts of artistic creation centre on this model of introspective self-refinement. In a traditional classroom or studio setting, learning tends to involve a hierarchical interaction between

learner and teacher ('dialogical' approach'). In 'trialogical' learning, a triangle is formed with the knowledge object (in this context, for example, a design idea or work of art) as the third component. Teachers and learners are both providers and receivers of new insights and methods and act as equal partners in the knowledge creation process.

When describing VCLCs, we also used Lave & Wenger's (1991) social theory of communities of practice, characterised by a commitment to the project, object production and the maintenance of community (Wenger 1998). Artistic learning has traditionally been conceived as the monological process of a talented individual acquiring the skills of a particular art form or the dialogical processes of master and apprentice (teacher and student) to hand down rules and techniques of representation. Triological learning theory and the model of communities of practice provides a flexible model for describing art education in twenty-first-century classrooms and youth art practices outside of school because it reveals the importance of visual culture mediation in contemporary students' lives.

Methods or modes of inquiry

In 2011–13, research data were collected through individual and focus group interviews, participant observation of creative meetings and exhibitions, and review of planning and finished art works produced by group members. Data collection for this study was conducted in the Amsterdam, Budapest, Chicago, Helsinki, Istanbul, Montreal and Hong Kong areas. These locations represent different local and national cultures, but share the same urban and global media immersion. All the groups we worked with are self-formed and operate outside of formal education. In this article, we discuss eight of the groups studied in Amsterdam, Budapest, Chicago, Helsinki, Istanbul and Montreal (Table 1).

Through a snowball method of sampling, researchers were introduced to groups by one of their members, who then introduced the researcher to other members. We used the same set of interview questions and criteria for observation across sites, but each community was handled by the local researcher of our team as an independent case study. Visual data including original artworks and photographic and/or video documentation of group activities were analysed using stylistic and iconographic methods. Interview transcripts were subjected to qualitative analyses using common phrase and close-reading thematic content analyses of the transcripts.

Discussion of findings

Processes and forms of collaboration in VCLCs

In VCLCs, collaboration functions as triological learning through processes and forms. Hakkarainen & Paavola (2007) distinguish six characteristics of triological learning: (1) concentrates on processes that aim to develop shared objects; (2) takes place over long periods of time; (3) involves interaction between individual and collective processes; (4) relies on cross-fertilisation of knowledge practices; (5) relies on collaborative technologies designed to elicit object-oriented activities; and (6) develops through transformations and reflections across forms of knowledge. In

Table 1. Characteristics of visual culture learning communities studied

Visual Culture Group	Number of members studied	Age (years)	City, country
<i>Gamers</i> (adolescents who have a high commitment to game playing, design and development)	14+8	13–21	Chicago + Helsinki
<i>Contemporary artists</i> (artists who address personal experience in their work)	5 + 4	16–18	Montreal + Amsterdam
<i>Cosplayers</i> (performers of self-authored scenes based on popular visual culture with self-made props and costumes)	23+5	16–23	Budapest + Helsinki
<i>Demoscene artists</i> (producers of non-interactive, digital audio-visual clips)	6	16–25	Helsinki
<i>Fanartists</i> (artists who appropriate and transform characters and settings from popular culture forms)	6	19–25	Chicago
<i>Street artists</i> (artists who create visual artefacts such as graffiti, stencils and murals in outdoor urban environments)	11+3	18–28	Amsterdam + Istanbul
<i>Manga artists</i> (creators of Japanese comics)	6	19–21	Hong Kong
<i>Video film makers</i> (producers of social and cultural messages through video)	27	16–20	Budapest

this section, we discuss how these six features relate and how they are revealed in young people's gaming and demoscene VCLC groups.

The first characteristic feature of dialogical learning emphasises a focus on shared objects of activity. This idea is similar to Lave & Wenger's (1991) social theory of communities of practice, characterised by a commitment to the project, object production and the maintenance of community (Wenger 1998), and is successfully employed in community youth art and technology projects (Herne *et al.* 2013). Shared objects can be conceptual or material artefacts or practices. The aim to develop a shared object is apparent when creating a game or demoscene *demo* (real time computed multimedia presentation on programming, music, drawing or 3D modelling) in a group.

Group participants usually have a shared starting idea or theme, but often no specific goal for the result. In these contexts, a relaxed and 'feel good' atmosphere is important to creation. Initial ideas about the concept usually come from individuals. Individual ideas are presented to the group and the group makes decisions about what idea they want to develop. A male demoscene artist explained how his ideas emerge:

My ideas come from my consciousness. Dreams affect a lot, as does everything visual around me. An idea can be as simple as a traffic sign or something that I have pondered about for a long time and deeply rooted in my life.

The usual work division is between programming, music making and graphic design. For example, when a character for a game is developed, the graphic designer needs to communicate with the programmer to learn what can and cannot be done. A male game programmer spoke about work division in his group when programming a shared project:

One concentrates on the game motor, that means the actual game-ability, another focuses on user interface matters thinking how the game would be as smooth to play as possible, and I focus on the mathematic side of it, such as artificial intelligence.

It is typical that one member's work inspires others and projects get new directions and solutions from the group. Another male demoscene artist said:

We observe each others' work processes and give ideas, in couples and in a bigger group. It seems to be a common opinion that following other member's work process inspires new ideas.

The second principle of triological learning emphasises longstanding pursuit of knowledge advancement. Gaming manifests a fast and rapidly changing form of visual culture. However, as Hakkarainen & Paavola (2007) state, the nature of knowledge creation is discontinuous, nonlinear and full of sudden breakdowns, obstacles, tensions and contradictions as short-term activities become long-term, triological processes. It is important to get to test and explore, without a fear of failing, which is what game designers do when they explore different visual and programming options.

The third triological learning feature points to interactions between individual and group processes. In gaming and computing learning communities, knowledge building means a bricolage of members' contributions. However, completely individual projects, unrelated to the collective project, are just as important. Some members say they invest more in their solo projects, emphasising differences in individuals' creative processes. However, participants enjoy the combination of individual and group work, as in the triological learning model, where knowledge advancement is represented as reciprocal personal and collective transformation (Engestöm 1999).

The fourth principle, cross-fertilisation of knowledge practices, emphasises investigative learning and hybridisation between non-experienced learners and professionals. This kind of cross-fertilisation happens within the VCLC groups as a result of direct teaching and observing. The gaming groups and demoscene group are made up of members with different experiences ranging from short explorations in game design to university studies or work experience in computing or graphic design. Even new, inexperienced members contribute design ideas and demonstrate new skills.

Fifth, appropriate technologies need to 'help the participants to create and share as well as elaborate and transform knowledge artifacts' (Hakkarainen & Paavola 2007, 5). VCLCs use various forms of collaborative technologies to solve technical challenges, as emphasised by a male demoscene artist:

Integration between technologies is essential. It is crucial to think about the best possible media and the technical challenges: would it work best as a live performance or as a demo on an old game console, or as a song, or is it a 'new' computer stuff, or would it work as a video film?

The sixth characteristic feature emphasises development through interactions among knowledge practices and conceptualisations. The constant transformation of knowledge is typical in gaming and demoscene VCLCs. For example, this occurs in real time coding at demo-parties (events at which demosceners and other computer enthusiasts gather to compete) that involve immediate feedback, reflection and learning by doing. Games engage players in complex art learning processes (Freedman 2014), social reconstruction (Parks 2008), visual and kinaesthetic modalities (Sweeny 2010), and exploring, deconstructing and reconstructing new knowledge systems (Patton 2013). As described in dialogical learning theory, interaction and transformation occurs in VCLCs as part of the construction of tacit knowledge, knowledge practices and concept development.

VCLCs are form-specific; most VCLCs are formed to acquire and transform a well-defined set of tools, but these are meaningful beyond their technical significance. For example, when a Hungarian girl learns sewing and embroidery to engage in Japanese cosplay, she channels her native folk craft skills into the appropriation process of a strange and exciting cultural identity inspired by comics. Graffiti in a small Dutch town may convey a range of meaning partly similar to, but also different from, those in Chicago.

Collaborative characteristics of identity formation and flux in VCLCs

Collaborative interactions aid young people in the development of identity stability and flux. Aspects of identity remain in flux throughout life, and during adolescence and young adulthood, students use art to experiment with different personas and life roles in the process of constructing the self (Freedman 2003). Vignoles *et al.* (2011) argue that three interacting aspects of identity exist: individual or personal identity, relational identity and collective identity. Individual or personal identity is the self-defined aspect of personality, including a person's moral values, ethical character and self-esteem. Relational identity has to do with the character of roles we play, such as a family member or a professional in interpersonal spaces and systems. Collective identity refers to the aspects of self that are constructed by a group and the meanings, emotions and behaviours that people adopt as participants in a group. The influence of VCLCs on member identity were reflected in all of the groups involved in this study, but in this section, we provide examples of

ways that collaboration leads to these three aspects of identity in the fanart and cosplay VCLCs.

Many VCLCs members reported that they feel rewarded by the improvement of confidence and self-esteem through their artistic production, which was supported by the group and by other people's responses to their objects. Some felt as if they were outsiders at school and becoming a member of a VCLC made them feel accepted. Others gained confidence through participation in competitions, exhibitions and conventions where VCLC members show their work. As one of the cosplayers stated about her attendance at a cosplay convention, 'the feedback was so great. I got so much attention. I like very much to be on view and get attention.' VCLC members helped to support individuals through times of doubt when they thought their art was not good enough or when people outside the group criticised their work. They also improved their work by learning from other members in the group, which improved their confidence and self-esteem, making it possible for them to achieve higher goals. A female fanartist stated:

You learn from looking at other work, and then you develop those criteria based on those works, and then you use those criteria to look at other work to see something that you can make better in that way. Then, you want to reach for it.

Some of the participants in this project wanted to become professional artists and believed that membership in a VCLC would help them to achieve that life goal. But, most of those participants who did not intend to become members of the professional art community still categorised their VCLC form as art and valued the opportunity for developing skills with which they could express themselves. Group members develop a range of art skills in order to validate their identities as artists. 'It is not just sewing, but photographing, make up skills, performance skills, all short of different skills. I just probably need an artistic form to express myself' (female cosplayer).

VCLC members seemed to understand that being an artist can be painful, but their dedication burgeoned on professionalism. A female fanartist stated that 'the important aspect of art in general ... the concept of critiquing, peer critiquing, constructive criticism, and being in groups ensures ... that you don't stagnate'. A female cosplayer said:

It doesn't matter which costume you have on you and for how long, you are so tired, when you get rid of the costume it is this amazing feeling of freedom, that yes, I don't need to wear this anymore ... I am completely in pain, but as long as it looks good, I just deal with it.

In part, it is the ability to experiment with various identities that is of interest to group members. They are similar to other people of their age who try on identities

to discover those that suit them. Some group members promote the flux of identity to illustrate the range of possibilities of the self, suggesting that their interest in the form could be 'the possibility to change myself and see myself differently' (female cosplayer). One stated:

You know so well what you look like and then you go in a con – put the costume on, put the make up on – and it just is so amazing how you can change yourself looking so different. It is so interesting.

A third female cosplayer suggested, 'it is the developing, and seeing yourself to develop all the time'.

An important aspect of communal identity is group structures of leadership. Some VCLCs have formal leadership. Among the fanartists, '[one member] became our group secretary and she managed our group schedule of activities' (female fanartist). However, most of the VCLCs in this study had informal leadership structures in which one or several members of a group would lead, organise or manage activities and events ranging from, for example, calling the meetings to mentoring. Usually, these members were the most senior in the group or most experienced in the visual culture form, and therefore, had gained respect from the other members of the group over time. This aspect of group interactions gave leaders valuable life experience and was critical for maintaining the group. As a male fanart leader stated:

[a leader member] encouraged us to participate more in club activities and we started participating more and more, assuming more responsibility roles and ... [the student who started the group] felt that that was a particularly good time for us to take the next step ... and what turned out is that we have three different leaders and I was one of them.

The development of identity in VCLCs involves becoming an expert who is able to help other people. This is done through brainstorming, critique and peer teaching. Among the fanartists, the participants all stated that they were trying to learn more and better skills by teaching each other. As a male fanart group member said: 'It was pretty much a study group where we were all trying to hone our skills ... and with members who have more experience, we would try to teach other younger students in being able to catch up more faster'. Being a member of a VCLC generally means that you are a generous contributor. A female fanartist explained:

Interactions between group members can range from non-art related things to bouncing ideas back and forth: brainstorming, more constructive criticism and just sharing of ideas essentially.

These practices that VCLC members use to develop knowledge and identities in and through their groups reflect the cross-fertilisation processes referred to in the triological model of learning.

Collaboration in networking and the flow of knowledge in VCLCs

Important to the discussion of triological learning in VCLCs is the ways that groups share knowledge among members to facilitate individual and collective goals of the group. We saw these processes function in all of the VCLCs studied for this project, but we use a VCLC here as a case study to illustrate the distributed character of networking for knowledge in these groups. In this case, there were no designated leaders, instead it was a group of young women with distributed responsibilities, skills, and know-how organised around shared projects. The distributed relationship among members enabled a knowledge flow consistent with a 'just-in-time learning' community (Baruah 2013). Just-in-time learning is a corporate concept that transfers to problem-based and distributed learning models concerning knowledge engagement when learners need it to solve a problem (Gee 2003). In this context, knowledge needs are met to solve specific problems rather than developed as skills and concepts to be used later for an as yet unknown need.

With no formal name to designate their group, this VCLC of young women are best described as contemporary artists. Over the past four years there have been four core members who take on collective projects, from group exhibitions to book projects. In a short-run artist book, the core group collaborated with other artists sending text and images back and forth among participants in a generative exchange of ideas. The works produced were as distinct as the individual members are, with forms of art ranging from painting to video installations. Each member's input involved an extensive and complementary set of artistic skills and knowledge. Using a triological learning framework to describe the activities of this VCLC, we have realised that the shared knowledge object (an exhibition or a book) provides enough space to allow for individual ideation within the collective constraint of a shared project. Knowledge is distributed among members, requested and provided in response to the problem at hand. When discussing learning in the group, a female contemporary artist stated:

Realising that you can do it, and if you can't do it, there's somebody that can do it, and if you ask them really nicely, they'll probably help you – that's one of the major things I've learned from the group.

A key feature of collaboration repeatedly stated was the willingness to compromise on the collective goals of each project. The female contemporary artist elaborated:

You have to learn patience to listen and allow that to sink in so that you can really let go of your original opinion, because when you're working with strong personalities

and people who are very independent in their own practice, everybody thinks their idea is the best idea but you really have to let it go at some point or try to, to a certain degree, or be willing to compromise at least. And that's a really hard thing. That's a hard thing to find in work environments, in any kind of environment.

Open-ended themes used as foundations for the group's collective projects have enabled them to honour each member's diversity and created the space for each to collaborate effectively. This does not mean that there are no artistic differences. In fact, members of this VCLC mentioned that a lack of collaboration or compromise led to at least one core member leaving the group. The willingness to collaborate and compromise enables each individual to acknowledge that their personal knowledge is limited and that the resources within the group are networked. A belief that collaboration is essential for the functioning of the VCLC makes the flow of knowledge possible within the group. This flow is crucial to provide a just-in-time learning environment as members respond generously to each other's needs.

Triological learning in VCLCs are dependent on successful strategies for collaboration among group members. In the above example, compromise among members is essential to ensure the ready flow of knowledge within and through the network. This is a critical factor for artists in communities to be successful collaborators (Grauer *et al.* 2012). The VCLC members in this case stated that they were willing to make compromises during the collaborative process in order to achieve their shared goals because they knew their ideas were valued by the group.

Global remixing as agent for collective production in VCLCs

Positive interdependence in VCLCs stretches beyond the forms of collaboration that are needed to solve local problems. Besides direct interaction among a group of people, membership in a VCLC often involves a sense of belonging to a global community. In the context of a global community, young VCLC members do not just produce films, cosplays or fanart; they are video filmmakers, cosplayers or fanartists. The short-term, local knowledge artifacts that VCLCs produce should be regarded as contributions to a much larger, globally shared object or domain that develops over a long period of time. Worldwide communication and transportation has blurred the edges between 'local' and 'global' forms of collaboration. Even non-interacting participants are knowledgeable about the work of their distant peers (Daichendt 2013). For example, the work of amateur game designers in Helsinki has drawn the attention of the international game community.

Triological learning theory builds on the ideas of sociologist Karin Knorr Cetina (2001), who has argued that many practices in post-industrial or information-based societies should be regarded as dynamic 'epistemic practices', which produce complex and question-generating objects of knowledge rather than conclusive forms. The conventions of VCLCs allow group identification in a globalised society that Bauman (2011, 49) cynically typified as 'an individualized multicultural cacophony'. Stylistic rules and group codes that many VCLCs maintain may be described as the proverbial metronome that aids the communal singing process, rather than rules

that suppress creativity and individual freedom. Participation in a VCLC enables members to study one cultural form in-depth, rather than surfing the twenty-first century's ocean of possibilities (Barrico 2014). The continuous construction, negotiation and remixing of a globally shared repertoire fuels long-term, cooperative learning processes.

Worldwide collaborative processes of production and valuing can be demonstrated by the practices of graffiti artists we studied. These international graffiti artists acknowledge that they operate in a particular domain with roots in drawings on public buildings and trains in New York in the 1970s. Graffiti is not just a visual style, but part of the globalised hip-hop culture that also includes rap (mc-ing), music (dj-ing) and dance (breaking) and has spread among youth in metropolitan areas all over the world. Competition is an important factor that creates an interdependence among participants: 'The hip-hop scene is competitive in a positive way. It can help people to develop themselves in their art' (male graffiti artist). Graffiti is not just about aesthetics, it is about earning respect:

It's valued when you are visible in a lot of places. There is this guy who does these ugly ducklings everywhere. I don't like the image, but because he does so much in so many places, he gets my respect. (Male graffiti writer)

The 'Global Hip-hop Nation' is acknowledged as a dynamic international style community whose participants operate as critics and cultural theorists (Alim 2009). For graffiti artists, knowledge about the cultural roots of the movement is conditional for membership. A male graffiti writer who worked on a collaborative project in Istanbul explains that these roots need to be considered during criticism:

Some people just do what is currently fashionable on the Internet and they judge others on that limited knowledge. They accuse you of stealing, but they don't know that thousands have used that style before. Such things never develop individually.

Globalisation processes do not automatically lead to cultural standardisation or 'McDonaldisation', because they often involve local reinterpretations or recombinations (Appadurai 2013). These forms of global hybridisation are highly recognisable in the graffiti community:

Some graffiti-styles that inspire American graffiti are called 'Eurostyle'. This is like a reversed effect, as European graffiti used to be influenced by American graffiti of course. (Male graffiti artist)

Collaborative local appropriations of global phenomena are influenced by many societal factors, including technical developments. An Istanbul-based graffiti artist explained that he had to be innovative in the beginning because 'we had to use this Turkish paint, with only seven colours'. Another explained that the fast adaptation of graffiti in Germany and the emergence of identifiable styles in cities like

Berlin and Hamburg were due to the presence of many paint factories in Germany. The internet has been the greatest influence on the 'glocalisation' (localisation of global influences) of collaborative graffiti practice. A Turkish male graffiti writer stated:

When I started we found out a style by ourselves. After Internet and the possibilities to get to other countries, styles mix up here in Istanbul, influenced by American, German or Spanish people.

The local adaptations of graffiti styles are now more globally available than ever before. Most of the interviewed graffiti artists acknowledged that sharing and discussing these 'epistemic objects' stimulates their creativity:

Graffiti is also related to 'Bildung'; how much do you know, how much have you seen and how open-minded are you? You cannot invent the wheel again because all the styles have been tried, but you have to try reliving things and to create a new flow.
(Male graffiti writer)

This glance into the international practices of graffiti artists exemplifies that objects of knowledge in triological learning can resonate on hybrid local and global scales. Learning processes are reinforced because members identify themselves with a collective, global practice shaped by peers with shared concerns and competences. In this sense, a local production by an individual VCLC member who adheres to a global practice is always collaborative and open-ended because it generates new questions with regards to the joint, networked enterprise.

Conclusion

In its recently published survey, the Program for International Student Assessment (PISA) has identified collaboration as one of the most important characteristic features of teacher and learner interaction for developing drive and engagement. Schools that are successful in the development of a range of competencies depend on collaborative strategies (OECD 2013). In a recent model for citizenship for the twenty-first century, collaboration is one of the most important skills identified (Binkley *et al.* 2011).

In this article we explored various outcomes of collaboration in the informal learning environments and creative practices of VCLCs in a variety of sites around the world. This research demonstrates that collaboration is a critical foundation for art learning and production among adolescents and young adults. We also revealed how group practices in and around visual culture support the acquisition of life skills and social integration (Herne *et al.* 2013; Sclater *et al.* 2013). By adopting the collaborative strategies of VCLCs, teachers can use the site of the classroom to reclaim a sense of belonging (Wild 2013).

We applied triological learning theory to the collaborative processes of VCLCs to reveal aspects of the complex relationship of objects to learning. Collaboration in the planning of and participation in object-oriented activities results in individual and collective transformation and knowledge-building. In these contexts, objects become motivating mediators of learning.

VCLCs are models for positive social interdependence as they work towards shared goals in supportive auto-didactic and peer-directed learning environments, both on a local and a global scale. Competences are enhanced through identification with a group practice, just-in time learning of new skills and through group critiques of ideas and creative products. Successful collaboration in artistic creation fosters group members' self-esteem and helps them achieve a variety of life goals. We also revealed tensions and conflicts of being member of a creative community. Here, members learn how to negotiate interests and values, how to arrive at compromises that lead to the flow of knowledge, and to innovative solutions to problems they set themselves. By working outside the framework of formal education, these groups show why the arts are crucial for personality development and reveal models of learning that can inspire the practice of art and design education in school.

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