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## Craft and Affective Domains of Meaning Making: Engaging Hand, Head and Heart for Transformative Sustainability Learning

Teaching theories and conceptual frameworks of sustainability in studio-based design courses often remain at the level of abstraction. Place-based education and hands-on building, however, offer ways to expand students' understanding of sustainable community development. These learning experiences immerse students directly in the cultural, socio-economic and environmental conditions of a given, local setting. Authentic interactions with a particular community cultivate relationships, enhance learning and deepen understandings of the complex interrelations between economic prosperity, social equity and environmental stewardship.

Craft is positioned at the forefront of a pedagogical model for place-based learning. This study explores craft and collective making as embodied activities that enrich learning experiences, promote environmentalism, and foster social equity. As a vehicle for teaching and fostering sustainable community development, craft is a catalyst for transformative change at three affective domains of meaning making: head, hand and heart. As an intellectual and creative problem-solving pursuit, craft supports development of our cognitive skills. In community design and build settings, craft facilitates cultural exchange and knowledge transfer. As an embodied experience, craft is an affective phenomenological approach to heighten sensory awareness and deepen haptic sensibilities of our material world through our senses. As a collaborative activity, craft cultivates emotional connectivity and fosters development of empathy for the 'other'. Finally, as a physical manifestation, craft expresses collective creativity, cultural identity and shared values. Each of these conditions is highlighted in this article as a way to explore ideas regarding craft, its meaning, and the potential it holds for sustainability, transformative learning and social change.

### Introduction

In schools across the United States, we are beginning to witness paradigmatic shifts in design education. This can be understood as a response to: (1) increasing public pressure for changes in higher

education that more directly teach sustainability and positively impact on societal issues (Carlson 2006); and (2) acknowledgement of a growing sector of design professionals coming together across disciplines to respond to humanitarian needs.

Recent events of natural disasters, exploding population growth and environmental crisis have attracted like-minded designers to join forces to enact change. Assembling worldwide, employing design thinking and empathic design skills, they engage directly with the needs of local residents to implement community-led design solutions. (Melsop et al. 2013)

Some design educators are embracing this call to action and are developing their curricula to prepare students with knowledge, skills, attitudes and mindsets they need to be active participants – if they so desire – as agents of change. In his seminal work, *Design Activism, Beautiful Strangeness for a Sustainable World*, Alistair Fuad-Luke identifies the implicit challenge for design educators.

While activists take on the role of 'change agents' ... they may also experience what is known as 'transformational activism', a concept where the activists and the subject(s) of their activism undergo a personal transformation as well as expressing it outwardly. This suggests that being an activist is part of a personal development and life journey to realize a state of being, as well as a desire to contribute to a greater societal good. (Fuad-Luke 2009)

From architecture and interior design to landscape and graphic design, new pedagogical strategies for sustainability education are being developed and curricula that focus on environmentalism are being implemented. At the same time, outside the field of design, theories of transformative learning are being implemented in coursework. This can be observed in the training of medical professionals. 'Doctors, nurses and related health professionals are trained to heal but their training [also] seeks to ensure that they display caring attitudes towards their patients'

(Shephard 2008). While emphases on sustainability (environmental stewardship) and social responsibility are increasingly embedded in design curriculum, questions of *how* to do this effectively remain. Providing students with learning opportunities to develop authentic empathy towards the 'other' is a critical component in the education of a designer.

This article describes a pedagogical model for place-based learning in the context of the theoretical underpinnings of Transformative Sustainability Learning (TSL). As a vehicle for teaching sustainable community development and as a catalyst for 'transformational activism', craft is positioned at the forefront of the study. The methodologies implemented for the applied research study are outlined in the body of the article. Following a description of the context, the text is organised in three sections: head, hand and heart to facilitate an understanding and record the affective domains of meaning making among community members (participants of this study) and university students. Tested in the field, the applied theories are open to further development and adaptability in other design pedagogies.

## Transformative Sustainability Learning

TSL is the combination of two distinct educational theories. Transformative learning is emphasised in the fields of social sciences, while teaching for sustainability is predominantly from education in the building sciences, i.e. architecture, landscape design and urban planning. Teaching for transformative learning (psychosocial development) and sustainability education (energy and resource conservation) has profoundly different sets of learning objectives and teaching methodologies. The first teaching approach strategically includes lessons that emphasise transformative change in the hearts and minds of students. It is teaching that affects change in attitudes, values and behaviours and involves the learner emotionally. The second approach stresses attainment of knowledge and skill sets that support principles and practices of sustainability and foster environmental stewardship. Emphasis in this case is placed on cognitive development, memorising facts, analysis of case studies and understanding through applied knowledge. Reinforcement of knowledge through application is a fundamental aspect of teaching principles and practices of sustainability. When theory is not applied to a real-world situation, it loses its effectiveness. An example of this can be observed in the architecture design studio. Teaching theories

and conceptual frameworks of sustainability often remain at the level of abstraction, as students have no authentic experience for application. However, connecting students directly with residents and providing place-based learning offers students ways to expand their understanding of sustainable community development. These experiences have the potential to connect them emotionally to people and place, and the particular cultural, socio-economic and environmental conditions of a given, local setting. Integrated as one, these two educational theories provide enhanced learning through direct experience. Yona Sipos et al. (2008) offer a useful definition for the theory of TSL:

TSL is a series of learning objectives corresponding to cognitive (head), psychomotor (hands) and affective (heart) domains of learning that facilitate personal experience for participants resulting in profound changes in knowledge, skills and attitudes related to enhancing ecological, social and economic justice.

Applied theory in a service-learning course Specifically, the case study described here is an ongoing community design-build studio, designated as a service-learning course at the Ohio State University (OSU), a tier-one research institute in the United States. One criterion for a service-learning designation at OSU is that course content is to be mutually beneficial to students in learning and the community in service. 'Service-learning ... expands and transforms the pedagogy of the typical studio by incorporating social, political, and ethical issues into the learning objectives' (Angotti et al. 2011). Students enrolled in the community design-build course, Design Matters, engage directly with members of a local non-profit agency in the rebuilding efforts of a local community art centre. In this pedagogical model, students benefit by gaining hands-on experience, applying knowledge of sustainable building, acquiring craft skills and learning to develop empathy for the 'other' as they work side-by-side with staff, administrators and teen members of the non-profit. The non-profit agency benefits from the design services provided, the higher education extended to the urban youth throughout the design-build process and the resultant products of the collaborative process. Participatory action research methods and collaborative design (co-design) processes provide the basis for the university–community engagement, which includes collective visioning exercises and full-scale craft-associated activities. Although the course is offered through the

department of design, it is open to all majors across the university. Attracting students from engineering, sociology, architecture and cultural anthropology, the composition of the transdisciplinary teams of students working together reflects the nature of professional practices. The design of the course purposefully integrates experiential learning with the study of social design practice. Methodologies specific for participatory design are intended to prepare students to be agents of change.

### Connecting course content with context

The site for the service-learning course takes place in an under-served part of town, east of the capital of Columbus, Ohio. University students engage with urban youth of the neighbourhood in community revitalisation efforts, specifically in the rehabilitation of a historic home. The socio-economic and environmental conditions, and social justice issues provide fertile learning ground for university students who are eager to put into motion participatory action research and co-design methods for environmental stewardship and social change. The adaptive reuse of the historic home serves as the renovation site for a new community art centre (see Figure 1). Formerly this structure housed a non-profit agency, Central Community House (Central). Central has provided social services to the residents of the east side of Columbus in the settlement house tradition since 1946. In 2006, the agency moved into a new facility, which enabled it to expand programming and social services. However, without substantial funding, the administrators of Central could not maintain both the new facility and their former place of residence. The older home was left vacant for years; the deterioration of the 3,800 square foot house and two-storey carriage house, and the overgrown vegetation contribute to the visible signs of a downtrodden neighbourhood.



Figure 1 Site for a new centre for art and community.

Formerly this part of town was a bustling and vibrant community of wealthy merchants and city officials. Yet, like so many American neighbourhoods that prospered during the turn of the last century, now the area shows visible signs of derelict activity and under-representation. A historical narrative can be read in the character of its street facades and urban fabric. Boarded-up homes and abandoned businesses reflect an area that suffers from violence, drug trafficking and economic turmoil. Many of the once stately three-storey homes adorned with ornate brickwork, turrets and lead glass windows are in various states of disrepair. Mom and Popshops and corner groceries have all but disappeared. Liquor stores and gasoline stations now stand in their place. In the middle of this pedestrian neighbourhood is Central's former place of business. Once a hub for social interaction, providing security and a sense of place to the area, the vacancy of the community centre has contributed to the poor conditions of the neighbourhood.

The renovation of the house and reinvigorated street energy have the potential to bring dramatic changes to the area. Capitalising on the creativity of the urban youth can add to the cultural expression of the community. Building revitalisation efforts can bring new life to the neighbourhood. The service-learning course is positioned to do both. During a fifteen-week semester, university students and urban teens from TRANSIT ARTS, Central's youth development programme, work on project-based teams. Small teams composed equally of urban teens and university students visualise, conceptualise, design and build furniture scale pieces as part of the interior architecture renovation project (see Figure 2). During the first half of the course, university students interact and collaborate with the urban teens at Central Community House's new facility, providing university students with place-based learning experiences. For the second half of the semester, the TRANSIT ARTS teens visit campus and work in the woodshops with the university students, thus providing them with direct college experience. With a higher education demographic of less than 15 per cent in the predominantly African American east side neighbourhood, experiential learning on campus provides meaningful impact for the urban teens. Together, university students and teens go through processes and explicit assignments that promote environmentally sound building solutions (engaging the head in cognitive development), cultivate collective creativity (engaging the hand in somatic learning), and foster cultural exchange and relationship building (engaging the heart in emotional learning).



Figure 2 Urban teens and university students co-design interior spaces.

## Head

As an intellectual and creative problem-solving pursuit, craft supports development of cognitive skills. By extending educational lessons about sustainable building practices to the group of urban teens, university students reinforce their sustainability knowledge. Although the course follows a typical design process of ideation, conceptualisation, design development and implementation, it is structured with specific participatory activities and co-design exercises that promote cognitive and metacognitive development in the minds of students and teens. Three activities are highlighted here to demonstrate the emphasis on the creation of re/constructed knowledge: collective collage making, material exploration and critical reflection.

The first participatory activity is collective collage making. University students are asked to pair up with a TRANSIT ARTS teen to craft a collage. Each couple receives cutout images, words and magazine clippings to use to communicate their real or imagined life. This activity poses challenges and some resistance from both groups as their backgrounds and life experiences are drastically

different. The majority of the university students are affluent and Caucasian, while the teens associated with TRANSIT ARTS are African American, often from disadvantaged neighbourhoods. However, as the process of making begins, tensions are relieved; energy is redirected towards personal expression and craft. Through this process, a dynamic exchange of cultural values and life experiences is shared. As students and urban teens select images and words that best represent their dreams and daily rituals, each individual learns more profoundly about the 'other'. A journal entry by one of the students reports: 'I would say that these interactions started off a little bit awkward but each time developed into an enjoyable and enthusiastic meeting of minds from very different perspectives.' 'Resistance, whether based on personal, community, or cultural difference, can be a point of entry leading to enhanced understanding, relationship building, innovation, and the transgression of disciplinary boundaries' (Angotti et al. 2011).

One of the next participatory activities involves the selection of materials for interior finishes and furniture designs. Again, a vast array of material samples is provided. From bamboo and wood to plastic and polycarbonate, some are sustainable natural resources, while others are synthetic and non-reusable. As university students describe the different materials, TRANSIT ARTS teens display genuine interest in understanding the principles of 'green materials'. As the teens interact with the materials, university students reinforce their lessons of sustainability and extend ideas about environmental stewardship. Emphasis in this case is placed on cognitive development and application of sustainability knowledge.

Critical reflection is the third activity intended to excel cognitive and metacognitive development. 'Metacognitive learning can be understood as learning how to learn' (Melsop et al. 2013). By keeping a weekly journal, university students are empowered to become cognisant of their own learning, personal growth and development. Critical reflection exercises throughout the course encourage students to become more aware of their habits of mind and belief systems. The cyclical processes of reflective practice often generate new ways of thinking and being; new knowledge is created based on direct life experiences. Each of these activities is intended to provide students with skills in co-design and knowledge to problem solve and respond sensitively and ethically towards socio-cultural and environmental dimensions of a design problem.

## Hand

Our body and how it experiences emotion, sense, or movement ... simultaneously engages in taking in and making sense of information. The cognitive and somatic functions work in conjunction with our cultural background to make meaning from our experience. (Amann 2003)

As an embodied experience, craft is an affective phenomenological approach to heighten sensory awareness and deepen haptic sensibilities of our material world through our body and senses.

Education theory over the past century has moved inexorably from confidence in the wisdom of stand-and-lecture formats to understanding that learning is initiated in the moment of student *body* engagement. In addition, despite the western dichotomisation of the mind–body split, whole-person engagement requires a head–hand, a somatic learning approach. John Dewey said, ‘students learn by doing’. In this paradigm, a teacher serves as a facilitator in the learning process. This type of learning environment requires that the student becomes an active participant in the learning experience and accepts an explicit challenge to learn. The activities associated with craft lend themselves well to the bodily engagement of doing, emphasising the tactile qualities of material manipulation and the haptic sensibilities of making.

Primitive man used his own body as the dimensioning and proportioning system of his constructions. The essential skills of making a living in traditional cultures are based on the wisdom of the body stored in the haptic memory. The essential knowledge and skill of the ancient hunter, fisherman and farmer, as well as of the mason and stone cutter, was an imitation of an embodied tradition of the trade, stored in the muscular and tactile senses. Skill was learned through incorporating the sequence of movements refined by tradition, not through words or theory. (Pallasmaa 2005)

The nature of the furniture-scale products for the renovation project brings questions of the body and space to the forefront. As the design projects evolve through two-dimensional visioning exercises to small-scale, three-dimensional physical models (see Figure 3), issues of human proportions, anthropomorphism and ergonomics foreground the inquiry. One of the participatory activities in this phase of the course is to physically measure team members’ height and arm length (these indicate reach capacity). This exercise plays a critical role in space–body awareness. Full-scale dimensions are converted mathematically to one-half inch equals a foot measurement. For the final part of the exercise, students and teens are asked to use these dimensions to craft small avatars of themselves from materials (wire, fabric, beads and buttons) supplied at the beginning of class. Crafted from similar materials, the models express individual creativity and also basic human conditions. This teaching assignment attempts to put into motion Aldo Leopold’s ‘I–Thou’ relationship theory, which advocates for a dissolution between subject–object dichotomies.



Figure 3 Small-scale physical models are designed and revised before large-scale construction begins.

Following the avatar making activity, university students and TRANSIT ARTS teens formulate ideas about the interior spaces and the furniture pieces necessary to support the programme for the newly renovated community art centre. Administrators and staff of Central are invited to critique the team-based projects. Based upon their feedback, design revisions are made, construction drawings are completed and full-scale building begins (see Figure 4). TRANSIT ARTS teens are invited to the university campus to work side-by-side with the university students to craft their jointly conceived projects. These activities emphasise learning through the body. 'Somatic learning brings the body into the learning experience so that the learner is always actively engaged in the education process' (Amann, 2003). The skills attained are stored in the memory of the body as the body viscerally engages in the process of making. Throughout the process, teens learn basic construction skills: how to use different tools and equipment, and methods of assembly. Following the completion of one of the more complex project assemblies, one of the urban teens expressed his feelings this way: 'You all probably didn't think I was smart when you first met me. But I am smart, and making this with-you all proves it!'



Figure 4 Full-scale construction and assembly take place on campus.

## Heart

Educating professionals to care involves setting learning outcomes that include affective attributes and using learning and teaching activities that promote their attainment. (Howe 2003)

As a collaborative activity, craft cultivates emotional connectivity and fosters development of empathy for the 'other'. Prior to going to the east side and before engaging community members in processes of co-design, university students write a response to a set of questions pertaining to their expectations for the class and their perceptions of the place and people with whom they will be collaborating. This part of the study emphasises psychosocial development. The activity prompts students to become more self aware of their perceptions. The orientation of the questions helps them critically probe the basis of their values and belief systems. In a safe and non-judgmental forum, students willingly share their dispositions. This exchange helps students situate their 'knowing' in relation to others in the classroom. Reflective practices of this sort are exercised throughout the duration of the course. In this way, students more fully engage with affective learning and can witness their own transformational growth.

During the first set of exercises that includes the collage and avatar making, university students reported that they had a sense of connection with the teens. In a journal entry, one university student reported: 'There has been a general sense of optimism, playful humor, and many moments of genuine openness with the teens, and a willingness [of us] to be vulnerable.' Guiding students in developing self-awareness, empathy towards other and active-listening skills empowers them to be authentic leaders and collaborative team members. If learning is a process of transformation and self-actualisation, as Abraham Maslow argued, then students learn best when given the opportunity to reflect on their learning. Neither transformation nor self-actualisation, however, can be developed without critical awareness of the process of growth and reflective, contemplative practices. Quality instruction is measured to a significant degree by the ability to provide guidance in such reflective processes without exerting external authoritarian values upon students.

Another key to development is communal celebration. At the end of each course, a public exhibition is held at Central's new facility. Open to neighbourhood residents, members and

staff of Central and university administrators, the public forum provides a way to showcase all the projects collaboratively designed and built during the semester-long course. In the large multi-purpose room at Central, each object is displayed, representing a collaborative process of knowledge and cultural exchange. Eventually, all of the built works will be installed in the renovated home (see Figure 5) but, until the interior spaces are ready, this exhibition serves to display the creative synergy and collective imagination between the TRANSIT ARTS teens and university students. The exhibition celebrates diverse communities coming together to collectively envision a renewed neighbourhood and cooperatively rebuilding a community centre; the completed furniture pieces demonstrate authentic collaboration in design and build processes. They are symbolic of the possibilities of new pedagogical models and the transformative effects they can have on individuals working collectively.



Figure 5 One of the first completed projects, the coffee bar, is positioned in the nearly renovated house.

## Conclusion

This article explored craft and collective making as embodied activities that enrich learning experiences, promote environmentalism and foster social equity. Teaching principles and practices of sustainable building are paramount to our educational systems today. The challenges we face locally and globally call for collective action. Training design students with the skills, knowledge, mindsets and attitudes necessary to take on these challenges has been the focus of this study. Emphasising the socio-cultural dimension of sustainability allows designers interested in social behaviour and culturally-influenced attitudes to join forces with architects and engineers who, for more than a generation, have developed various technologies for energy efficiency and advanced technical means for sustainable

building systems. While these are significant contributions, sustainable design and environmental stewardship depend on individual and collective behaviours, attitudes and mindsets.

The approach described in this article offers university, colleges and educational programmes invested in advancing sustainability education and transformative learning a form of place-based pedagogy. Collective making provides opportunities to apply a phenomenological approach in teaching, test methods of collective creativity in the field, and advance concepts of psychosocial development in environmentalism. The hoped-for results of this applied research endeavour are multifaceted and provide benefits to the community and the university students. Emphasis throughout the service-learning

course was an integration of head (cognitive development), hand (somatic learning) and heart (emotional connectivity to place and people). TSL and the methodologies of participatory action research and co-design are grounded in: (1) design ethics, (2) social justice, and (3) environmentalism. The development of the service-learning course and the methods of engagement provide fertile ground for discovering critical aspects of individual (self) and collective (community) transformation. The next steps of the study include a more thorough account of student experiences, documentation of students who demonstrate transformational learning, and work as change agents towards social justice and environmental stewardship. The following quote provided by an industrial design student enrolled in the course establishes a promising beginning for such qualitative research:

This course has already made a HUGE impact on how I approach design matters ... multi-functional, interdisciplinary teams are the only way to find the best solutions to big problems ... this class really puts it all into practice in a way that our traditional studios have not. I love working in class with engineering, architecture and psychology students. I've learned as much from them as I have from the Transit Art kids ... I think this is extremely valuable ... It also affects how I feel design can make an impact on the world. As a global society with dangerously high population levels, we're starting to face brand new problems. Designers are simply problem solvers, so our skills should be put to use on these humanitarian issues. I know that it's just a vague, idealistic notion at this point, but I can finally see a direction I'd like to take professionally.

## References

- Amann, T. (2003) Creating space for somatic ways of knowing within transformative learning theory. In: Wiessner, C.A. et al. (eds.) *Proceedings of Fifth International Conference on Transformative Learning*. Columbia, NY: Columbia University Press.
- Angotti, T., Doble, C. and Horrigan, P. (2011) *Service-Learning in Design and Planning: Educating at the Boundaries*. New York: New Village Press.
- Carlson, S. (2006) The sustainable university. *The Chronicle of Higher Education*, 20 October.
- Fuad Luke, A. (2009) *Design Activism, Beautiful Strangeness for a Sustainable World*. Oxford: Earthscan Publishing.
- Howe, A. (2003) Twelve tips for developing professional attitudes in training. *Medical Teacher* 25(5) pp. 485–7.
- Melsop, S. (2014, forthcoming) Educating the next generation of social design practitioners. In: *Hawaii International Conference of Arts and Humanities (HICAH) Proceedings*.
- Melsop, S., Chan, P. and Shim, S. (2013) Developing a collaborative design studio: Transforming mindsets for emergent practices. *Industrial Designers' Society of America (IDSA) Conference Proceedings 2013*.

Pallasmaa, J. (2005) *The Eyes of the Skin, Architecture and the Senses*, p.40 West Sussex, England: John Wiley & Sons Ltd.

Shephard, K. (2008) Higher education for sustainability: Seeking affective learning outcomes. *International Journal of Sustainability in Higher Education* 9(1).

Sipos, Y, Battista, B. and Grimm, K. (2008) Achieving transformative sustainability learning: Engaging head, hands and heart. *International Journal of Sustainability in Higher Education* 9(1): 68–86.

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