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HOW CAN COMMUNICATION LITERACY REINFORCE HOLISTIC DESIGN PRACTICES?

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ABSTRACT
The article explores how the knowledge of communication theory can help design practitioners to achieve a more critical understanding of the contexts they encounter during their professional careers and lifelong learning paths. It is discussed how certain concepts of communication studies may benefit both interpersonal interactions and the design process itself. Autoethnographic research is used to reflect on the group dynamics of 5 product design students during a practical training period in Oslo Municipality. The different roles and behavioural patterns of the group members are analysed against the background of cybernetic theory and Bateson's communication theory, as well as Schön's theory of reflective practice. The ways in which the group dynamics could be altered to facilitate more holistic approaches are suggested based on the findings obtained. By letting go of one's roles and habits, accepting contradictions and opening up for questioning despite the uncertainty and threats it may pose for the comfort of stability, conditions can be created for more inclusive, engaging design processes, knowledge-sharing and, most importantly, learning through reflection. It is argued that communication literacy is one of the skills that form the basis for comprehensive and innovative design methodologies. Understanding communication phenomenon and the ways it can be used to facilitate learning, i.e. change, have the potential to offer a new perspective on the wicked problems in design fields. Thus, it is suggested that they be included in the corresponding curricula.

Keywords: Communication theory, cybernetics, learning, group dynamics, product design

1 INTRODUCTION

Designers typically work as part of a team, with other designers, or in multidisciplinary settings. Therefore, knowledge and skills within group communication is becoming more important for the profession. Learning how to navigate in group environments can ease the already complicated design activities and ensure more beneficial, as opposed to adverse, group dynamics.

However, these communication and group dynamics represent complex contexts. That is, superficial knowledge about and experience with group work does not ensure benign and desired group dynamics and subsequent results. As every individual situation differs, it is only through vigorous reflection on that context that one learns, and through such learning, reaches a deeper understanding. This, in turn, results in more holistic ways of approaching wicked design problems and contributes to the development of sustainable solutions.

Hence, the article explores how communication literacy can assist designers in reflecting on and understanding the complex contexts they are placed in and, as a consequence, reinforce holistic design practices, and to a greater degree ensure the functioning of the services or products they design. Communication theories are, admittedly, plentiful and it would be overwhelming for design practitioners to have to familiarise themselves with a whole new body of knowledge, and, thereby, possibly achieve a contrary goal by aggravating rather than alleviating the burden imposed on their shoulders. Yet, as we further suggest, certain fundamental concepts might reveal new opportunities through reframing design practice.

2 CYBERNETIC VIEW OF COMMUNICATION

Prior to delving into communication theory, one should specify what definition of communication is employed in the discussion of the subject matter. From the cybernetic point of view, "communication reveals itself through the decomposition of a dynamic system" [6]. Behaviour of the whole system is composed of behaviour of each part viewed separately and communication among all parts [6]. A group,

as a form of a dynamic social system, does not merely consist of its members with their various skills and knowledge, but more importantly, the interaction between them, which is seen as a circular process. "Circular processes are such that a transitional state or message passing through a point in a cycle returns to it in some form and affects the future state or message now passing through a second and more times" [6]. When two individuals communicate, one acts in accordance with individual goals, the context at hand, and the thinking partly determined "by its immediate past" [1]. These actions, or *networks of circuits* [1] are then interpreted by another person, who based on the updated information and his or her own goal, acts too. The response is further interpreted by the first person, who continues the circularity by adding new information and modifying the message. In groups with a higher number of members there are many such simultaneous circuits. With each new member the complexity increases exponentially, affecting the group dynamics in unpredictable ways. Each person continuously adds to and modifies the large pool of commonly created information [5].

2.1 Bateson on communication

Bateson is particularly interested in the learning aspect of communication phenomena. His work on learning is widely adopted and describes it as a meta-level in comparison to, for example, Bloom who later focuses on the individual stages of development [2]. That is, Bateson is not so concerned with the steps for learning as pedagogic or education tools, rather he describes the circumstances, mental state, drive, and environment that allow or enable learning on different levels of perceived reality.

Zero learning is "specificity of response which - right or wrong - is not subject to correction" [1]. It implies no learning as new information produces no change in response.

Learning I (or proto learning) is "a change in specificity of response" [1]. New information can produce a limited variation in response.

In Learning II (or deutero-learning) one steps outside of "the box" (or "unfreezes") and may either make changes to the existing set or choose another set of alternative responses [1]. The process results in the "freezing" of the new behaviour and re-entering learning I to protect oneself "from chaos of continual change" [8]. Although this is a fruitful exercise, it essentially leads to a replacement of a given schemata with another.

In Learning III, "a corrective change in the system of sets of alternatives", one does not cease questioning mental models and persists in exploring the contexts of context he or she is in [1]. New information leads to major reconsideration of paradigms, infinite inquiry and in some cases redefinition of oneself.

Although Bateson claims that most humans rarely advance beyond Learning II, he introduces tools for change that may help one to reach hierarchically higher levels of abstraction [8]. The tools can be summarized as follows.

2.1.1 Accepting contradictions

"Contradictions can be identified as tensions between two or more components of the system" [9]. Together with contraries they occupy an important place in Bateson's theory and are related to the notion of a double bind, a state whereas one receives two or more contradictory messages or commands (usually at different levels), i.e. "a situation in which no matter what a person does, he "can't win""[1]. Although a double bind may cause one to "develop schizophrenic symptoms" [1], tolerating and resolving contradictions can "lead to significant behavioural change" [9].

Although interpersonal conflicts, for instance, are generally perceived as something to "be managed", within organisational contexts, avoidance and denial of conflict often result in the development of defensive routines and "skilled incompetence", which in turn prevent innovation [4].

2.1.2 Learning the context of contexts

Learning each new meta-context helps to narrow down the predictions within the sub-context and, thus, enables an individual to accelerate (or limit the influence of) learning at the lower level [3] and allows for "greater flexibility" in acquired premises and "a freedom from their bondage" [1]. Realizing that each frame is infinitely embedded in a wider context, each idea is part of an underlying paradigm, which itself presents a mental construct and so can neither be right or wrong, but is merely a way of making sense of the world chaos, that there is no absolute and everything is relative may be overwhelming and make day-to-day lives seem pointless. Yet, it might as well train one in tolerating uncertainty and accepting retreat and re-engagement as integral to learning practices.

2.1.3 Letting go of one's self

"With persistent or dramatic reinforcement of proto-learning early in life, individuals adopt traits and characteristic behaviour", which form "a person's personality" [1]. A self-concept develops and crystallizes over time causing one to believe he or she is a sum of habits and traits incapable of major changes. What was developed with the aim of "optimizing" one's existence, now becomes a limiting factor. Due to lack of exercise in deeper inquiry and self-reflection, intentions to change one's behaviour rarely lead to successful transformation. By becoming "free of roles and the habits of personality" one, nevertheless, steps into the infinite learning path [8].

3 SCHÖN AND THE REFLECTIVE PRACTITIONER

Since the scope of application of design competence continues to expand, the ability to think creatively and generate innovative solutions is being continuously challenged. Innovation demands the ability to learn which, in turn, requires reflective practice. "Experience alone does not lead to learning; reflection on experience is essential" [7].

A design practitioner who is content solely with problem-solving and avoids reflective practice in favour of stability, is unlikely to reach higher levels of learning where genuine innovation can be found. Although one might still learn in different ways, higher orders of learning remain inaccessible to him or her.

If, on the other hand, "a practitioner becomes aware of his frames, he also becomes aware of the possibility of alternative ways of framing the reality of his practice" [10]. This is made possible through "reflection-on-action", which occurs after the event, "reflection-in-action", which implies thinking while doing, and "knowing-in-action", or tacit knowledge [10]. The latter two are found particularly challenging by novices, who, for the lack of experience and understanding of the design practice, tend to merely follow prescribed guidelines and instead of engaging in a "reflective conversation with a situation" [10].

4 METHOD

As part of the MA Product Design programme, five OsloMet students (including one of the authors) underwent practical training in Oslo Municipality in the period between March and September 2020. In terms of intragroup communication, the internship resulted, as agreed by all the interns, in an effectively positive, but sometimes frustrating experience, which might have affected the quality of the design work produced. An autoethnographic study was carried out to identify and reflect on some of the factors that inhibited favourable group dynamics within the design team. Personal reflections, as well as reflections of the fellow group mates collected through semi-structured interviews were used to reveal types of behaviour observed during the internship period.

The study did not consider the different backgrounds of the interns due to complexity entailing such a task. The aim was not to compare individual interns, but to focus merely on the communication functioning and group dynamics and how those affected learning.

5 INSIGHTS

The characteristic behavioural patterns reported by the interns were classified into seven categories which were then analysed within the framework of the typology of learning and communication. The results are summarized in the table (Fig. 1). Learning Zero and Learning I formed one behavioural category (L0-L1) which was characterized by little or no learning. Learning II leading to returning to Learning I formed the next category (LII to LI), while Learning II resulting in further expansion of inquiry formed the last group (LII to LIII). Although the interns could be inclined towards certain forms of behaviour, the same communication patterns could be observed in all the members at the different stages. Thus, the following is the description of various behaviours, not the characteristics of the individual interns.

5.1 Self-concept

Differing habits and personalities were shared by the group members on several occasions with the aim of improving the teamwork. Most of the members had a fixed idea of their personality traits and preferences. Some could recognise their own characteristic weaknesses and expressed an intention to change, yet few or no attempts were registered to alter the existing behaviour. Other interns had a more flexible self-concept and allowed some of the other members to shape them, thereby taking a rather

unassertive stance in the process of (re)definition of their character. Although such flexibility can ease personal transformation, active engagement is necessary if one is willing to achieve higher levels of learning. In case of compliance, learning is controlled by the one directing the change. Whether the result will be the refreezing of the new self-concept or the continuation of change is beyond the control of the person subjected to change.

5.2 Opinion-forming

Scarce interest in a discussed question could cause a member to either opt out of forming any opinions or build unspoken assumptions. Those not indifferent to the subject could follow several paths. Some struggled to withstand the state of ambivalence and rushed into conclusions and judgements. More submissive interns were prone to conform to the dominating member(s). Such short-lived attempts fail to promote profound explorations and, therefore, learning is limited. If one, on the contrary, decides to take time to reflect and resist the urge to devise a definite outlook on the situation, he or she is closer to the LIII path.

5.3 Dealing with disagreement

In some situations, certain members displayed a tendency to internalise their dissent. Such behaviour might have aided in maintaining amicable atmosphere within the group, yet it was hardly helpful for the learning purposes. Others managed to voice their standpoints, although when faced with opposition their attempts discontinued shortly. Those who were more persistent were sometimes more interested in self-assertion and persuasion of others, rather than what the coexistence of polarities might reveal.

5.4 Behaviour when faced with complexity

Disregarding and complaining when faced with complexity were the types of responses that resulted in little or no learning. For those willing to engage with the complexity, the natural reaction was often to rationalise and try to reduce the problem to a manageable scale. Tolerance towards high levels of complexity and uncertainty and further expansion of inquiry were rarely observed.

5.5 Approach to decision-making

Some of the interns found decision-making uncomfortable, preferring the more assertive group mates to take the lead. The more engaged members who actively partook in talking things through, could either neglect the other members' comments or interests or exclude them from the process altogether. Even in cases when everyone's interests had been brought into the discussion, sometimes consensus could not be reached, and the dominating members had to prioritize their own interests to the detriment of the more submissive ones. If the members had succeeded in resisting the temptation to fall into their own characteristic (submissive or dominating) roles and becoming detached from their own interests in the discussions, they might have been able to direct their attention towards the quality of the suggested ideas instead.

	L0 -L1	**LII to LI**	**LII to LIII**
Dealing with disagreement	- concealing - internalising	- opposing, but easily conforming - convincing others to change their viewpoints to match one's own opinions	- continuously exposing conflicts and contradictions - seeking clarification and elaboration - challenging others' opinions, as well as one's own standpoint
Behaviour when faced with complexity	- ignoring, disregarding - complaining, blaming, criticizing	- simplifying (reductionism), rationalising, seeking existing explanations and methods - prioritising simpler or more urgent problems	- tolerating complexity - expanding inquiry further
Self-concept	- clearly stating one's	- acknowledging one's own	- having flexible concept of

	personality traits, habits and preferences - consistently reproducing behavioural patterns	weaknesses, but putting little or no effort into changing - enabling others to define oneself	oneself, not being bounded by personality and habits - taking active participation in redefining oneself because of one's own experiences
Opinion-forming	- having little or no interest - building unexpressed assumptions	- jumping to conclusions - passively letting others shape your viewpoints	- taking time to seek more information and discover new perspectives
Approach to decision-making	- avoidance, expecting others to take initiative and decide - neglecting interests of others while making decisions - excluding others from decision-making	- being aware of others' interests, but prioritising one's own interest in decision-making	- group discussion and collective decision-making - seeking feedback to one's own suggestions

Figure 1. Behavioural patterns and the corresponding types of learning

6 DISCUSSION

In general, the communication between the group members remained within the range from Learning Zero through to Learning II. The interns were often drawn towards basic learning where stability was achieved. Acting within existing boundaries of one's own knowledge appeared to be a safer choice. Such responses neglecting the specifics of the given context often proved to fail in addressing complex issues, in which case the intern was led to admit the limitations of his or her understanding of the context and turn to inquiry. The threat to stability posed by questioning the relevance of one's own knowledge, coupled with the complexities and ambiguities of the context, ultimately resulted in intimidation and withdrawal from further exploratory attempts. The networks of communication and behaviour circuits that describe the group's praxis during this project thus, advanced towards skilled incompetence.

With five interns constantly switching between and pulling one another towards different learning levels, the group dynamics and, consequently, work on the projects quickly became complicated and the praxis thus destructive. Conflicting goals and expectations of the design process were an additional stumbling block impeding communication flow.

Although such situations are commonplace in group settings, there are no easy ways to deal with them. What can be observed in some groups is that conflicts are resolved by more flexible and less assertive individuals giving in to the dominating opinion and discontinuing their efforts to question the status quo. Reaching a consensus, however, should not be the goal. Rather practitioners should aspire to persevere in their inquiry and recognise wider contexts of situations they are faced with in their practice. Thus, it is essential that designers are trained to embrace reflective practices and recognise the different levels of abstraction at which communication and learning occur.

7 CONCLUSIONS

Although the necessity to reach higher levels of learning might vary from individual to individual, for design practitioners who are currently being empowered to intervene at all levels of existing systems and lead innovation, being able to continuously learn from the contexts they encounter and the context of that context is crucial. Shallow approaches are in most cases unfit for resolution of problematiques found in dynamic complex environments and in some cases might even aggravate the problem. Raising awareness of the learning phenomenon and promoting communication literacy can equip practitioners with the skills necessary to face the complexity and grow more confident in navigating it.

Bateson himself admits that "[e]ven an attempt in Learning III can be dangerous" [1] and one can hardly remain sane if he or she subjects every existing idea and paradigm to questioning. Yet one might also

try to gradually build tolerance towards uncertainty and instability. By regularly exercising expansion of inquiry and slowly extending the presence in Learning III zone before seeking rest at the lower levels, it may become possible to adjust to the new ways of thinking.

The matrix presented here is merely an attempt in deeper inquiry and thus not intended for universal use. Rather, it is a suggestion for a conversation on the topic and it is our wish that it be changed and complemented by the fellow design practitioners or anyone else involved in design education and practice.

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