Collaborative Instructional Design as Culture-Building

Katy Campbell-Bonar
Alton T. Olson

Abstract: Despite the critically reflective work of the past decade, we think that many theorists have not gone far enough In urging a re-orientation In design models In which Inter-Instltutlonal teams must work cooperatively over a long period of time. One essential way in which the design process in a collaborative team approach differs from the existing rational systems approaches Is In the creation and use of cultural tools during the design process. The traditional models, which are linear and algorithmic, fall to take into account one of the unique products of a collaborative design process: that of culture-building. In this paper the social processes of culture-building during a collaborative instructional design team effort will be examined retrospectively, We believe that a new perspective on collaborative instructional design will help project managers and instructional designers become attuned to the social interactional nature of the team-based instructional design process.

Resume: Malgre les serieuses remises en question des dlx dernieres annees, nous croyons que les theorlciens ne sont pas alles assez loin en proposant une re-orientation des modeles au sein desquels les equlpes inter-Institutlonnels dolvent travailler en collaboration, durant de longues perlodes. Une difference majeure entre le processus de cooperation entre equipes et les systemes existant est la creation et ('utilisation, au cours de la creation du modele, d'outlls culturels. Les modeles tradltionnelssont lineaires et algorithm iques et ne tiennent pas com pte des rejalllllssements exceptionnels que le modele collaborateur peut avoir, c'est a dire la collaboration culturelle. Dans cet expose, I'evolution soclale de la collaboration culturelle en cours de creation du modele cooperatif de formation sera examinee en retrospective. Nous croyons qu 'une nouvelle perspective du modele cooperatif de formation pourra aider les chefs de projets et les concepteurs de modeles de formation a mieux comprendre la nature interactive du milieu social du modele de formation base sur le travail d'equlpe.

> What the artist and the creative scientist have in common is that both are makers of form, one qualitative, the other theoretical, who offer vis images of the world. When the images are well-crafted they provide compelling schemata that capture both our attention and our allegiance. The forms we call art and science, rite and ritual, not only provide schemata through which we experience the world, they are also forms through which we represent it...
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> Elliot Eisner, p. 16, 1988

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Traditionally, instructional technology has evolved and has seen itself as a subculture within its fields of application, such as teacher education. By this we mean that instructional technology has not been considered an integral part of teacher education, often existing, if at all, as a support unit in faculties of education. Efforts to bring faculty into the instructional technology subculture have typically resulted in short term involvement from which no lasting changes in perspective emerge. In this case, the outsider is *acculturated* to the prevailing rational view of instructional planning. Acculturation is a one-way transmission of knowledge and skills which often entails no lasting commitment to the value system of the subculture. In the *collaborative* design project described in this article it became evident that acculturation, which presumes the existence of a larger culture, did not adequately characterize the process in which we were engaged. For us, characterizing the process of collaborative instructional design as acculturation was inappropriate: the nature of a collaborative design process reflects *culture-building* instead. Admittedly, there must be aspects of acculturation in a project such as this, for example, learning to use specific technical language. However, in our experience culture-building was an important complement to acculturation in the hard work done at the beginning to make the explicit plans (of an instructional system) part of the implicit, tacit knowledge of the team members as an interactive, recursive process in which the participants shape artifacts and process and are, in turn, shaped by them. Culture-building goes beyond team knowledge-building, which we see as making surface accommodations to the personal/professional agendas of individual team members. This may be one reason why "traditional" instructional design teams, working with linear, algorithmic models, are notorious in their failure to coexist without difficulties (Naidu, 1988).

In this article the authors propose an alternative to the view of instructional design as a rational, systematic process reflecting acculturation of design team members. In describing a successful, collaborative videodisc design project *retrospectively,* we found that the characteristics of an instructional system did not fully reflect our experiences in the project. Our experiences were closer to the creative process described by Ivor K. Davies (1991) in another context:

> Attempts to make instructional development a craft or a science have supplied in the first case a heuristic and in the latter case a recipe or algorithm that has largely failed to realize the potential of ID. To a certain extent, the problem arises from a misunderstanding of the nature of art, craft, and science... (p 96)

Indeed, Davies has identified what for us became the tension in trying to reconcile our craft knowledge of teaching with the technical imperatives of systematic instructional design models: there is not a recognition of the importance of artistic endeavour in the creation of instructional materials. Our dissatisfaction with this still-prevailing view has also been voiced by other members of the design community: see for example Beckwith (1988) and Mitchell (1989).

EMERGING PARADIGMS IN INSTRUCTIONAL DESIGN

Emerging paradigms in instructional design seek, in part, to reconcile the rational view of design as product-oriented optimal blueprint and design as process-oriented and ontologically-based. At the same time as there is growing interest in the nature of teacher thinking, theorists such as Tripp (1991) and Schon (1983,1987) are exploring the possibility that designers may use different approaches at different times on different kinds of problems, and that the decisions may be at least partly intuitive (Tripp, p.5., 1991). In curriculum theory, a critical, interpretive understanding of instruction is exemplified by Joseph Schwab who describes the four *commonplaces* of learning: the teacher, the student, the subject matter, and the milieu. These four form the starting points of developing a *true practical knowledge*. This non-legitimated aspect of design is significantly different from an objectives-driven technical model according to Hlynka and Belland (1991).

> Even if an instructional developer is striving mightily to be scientific and systematic in the design of an instructional system, many of the decisions made in the course of development will be aesthetic, intuitive, experiential and phenomenological...Critical paradigms provide a mode of inquiry which can provide insight and information which goes beyond the possibilities of scientific inquiry... (into) the realm of art. (p 9)

In its transformative orientation this paradigm, along with elements of the situational-interpretive orientation, seems to best reflect Schon's view of design-as-dialogue and Banathy's (1987) reconceptualization of design as dialectical, spiralic, and holistic, and may provide a conceptual framework for examining the collaborative design process as one in which participants engage in the construction of a meaning-full instructional plan through conversation.

As Davies (1991) suggests, design involves a subtle and sensitive blend of art, craft and science according to the needs of the task *and the people involved in that task,* which culture-building underlies. Highlighting the design, development, implementation and evaluation stages of instructional design — in the belief that these somehow confer the status of scientific endeavour — is, in fact, reinforcing the craft side of what is essentially a creative act of inquiry (p 96). Collaborative design activities may contribute to this process by enhancing creativity and making it possible to generate solutions that will be considerably different from those generated individually.

Davies (1991) poses two questions for the field: *How can instructional design as a concept be communicated?* and, *What dimensions of knowing does it recognize?* We believe that a reorienting of the concept of instructional design to celebrate the role of creativity, imagination, reflection and collaborative conversation will better represent the essential *humanness* of the process.

Instructional design activity has moved from the behaviourist orientation of the sixties through a cognitivist orientation in the eighties to a more constructivist view in the nineties. This latter paradigm considers the mterrelatedness of the teacher and the learner, the essential aspect of the teacher-as-planner residing in the knowledge structures and instructional plans that he/she contains. In this sense, the teacher, partly by virtue of once having been a student, and partly by praxis, acts as the student's voice in the design of instruction. And the interaction of the learner's cognitive operations within the entire process of the instructional system leads the learner to construct new cognitive structures and operations (Streibel, 1991).

Lucy Suchman (1987), in exploring the user's interpretation of plans in an expert system, questions whether any *one* theory or model, in our case of instructional design, can be used to guide the actions of the learners or practitioners. In particular, how can the cognitivist paradigm guide "human teaching and learning when these activities are fundamentally context-bound, situational activities and not context-free, plan-based activities?" (p 120).

As does Donald Schon (1983), the foregoing authors draw attention to the problematic aspect of a paradigm in which plans must become situated actions when human beings are involved. Similarly, each individual in the collaborative instructional design process brings a unique biography and history to each new experience, and each interaction entails a unique, "phenomenologically and contextually-bound" process which requires sense-making. In other words, the participants in such a process act, or design, on the basis of embodied skills and understandings, or *cultural knowledge,* and not solely on the basis of rational, technical plans. Creating this social environment of reflective problem-solving situates the team at the center of a creative, dialectical process in which life experiences are integrated into the community of knowers. Elements of this knowledge community include the sharing of meanings, values, imaginations, and histories. This life-world validating discourse or practical discourse is discussion of a fairly rational kind about the validity of norms and rights, rules, and factual propositions.

THE COLLABORATIVE CULTURE

> Instruction is a human creation and the addition of technology to instruction is also a human activity. Instruction and instructional technology are human inventions that spring from human values and human designs. They are value saturated and operate in the social world quite unlike phenomena in the physical world. Social inventions such as instruction and instructional technology, both in their inception and subsequent histories, are never value-free or value-neutral. They resonate with the values of their human creators, who themselves are situated in a particular culture in a specific time and place. As the culture evolves, old social inventions may be seen as having fortuitous carryover qualities or, at the other end of the continuum, they may be seen as deeply flawed for this time

> and place. But we can only know or act on this knowledge if we engage in social interpretation and articulate a sense of professional responsibility for open-ended criticism within our own field of instructional technology.
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> Johnsen & Taylor, p. 82, 1991

Although instructional technology has been considered value-neutral (Engler, 1972, cited in Taylor & Swartz, 1991), as a culture it is more accurately value-intensive in its support of a particular scientific worldview (Taylor & Swartz, 1991). Viewed as being compatible with a "static and passive curriculum that promotes the current dominant authority in society and disempowers non-dominant groups" (Taylor & Swartz, p 57, 1991), instructional technology has supported the delivery of received knowledge (Fox, 1991). In the late sixties, however, some curriculum designers had begun to challenge the emphasis on curriculum design as a set of carefully written behavioral objectives. Eisner, for one, asked whether the rational prespecification of goals had to be *de riguer* in curriculum planning, responding that"...(this assumption) is rooted in the kind of rationality that has guided much of Western technology. The means-ends model of thinking has for so long dominated our thinking that we have come to believe that not to have clearly defined purposes for our activities is to court irrationality or, at least, to be professionally irresponsible. Yet, life in classrooms, like that outside of them, is seldom neat or linear" (cited in Saettler, p 291,1990). It is our view that as teams of individuals with diverse personal and professional backgrounds come together in a collaborative design team the process of sharing and creating new knowledge and meanings must fundamentally change the perception of instructional design as a quantitative, linear, rule-based, impersonal task. In this rational view of design-as-optimization, instructional design is a formal representation of problem-solving heuristics (Tripp, 1991).

DeBloois (1982) delineates the inadequacy of current design models for interactive video:

> A model or paradigm is defined as: a standard or example for imitation or comparison; a conceptual framework or structure for action; a plan, usually represented as a graphic analog or flow chart. Cyrs (1976-77) claims we construct models in order to simulate the organization of data and phenomena in such a way that we can see the intended variables and possible influences or consequences or altering these relationships. ... .Following this assertion, a model must be adequately conceptualized to abstract the parts or *structural elements* as well as the *process elements* which make up the whole of the entity being analogized....However, with the pressure of recent instructional technology, it is becoming increasingly apparent that our models of the past decade no longer adequately represent either the structural or process elements of that which they are supposed to simulate, (p 31)

Since the design of an interactive videodisc requires the cooperation of individuals with diverse personal experiences, values, knowledge structures and professional backgrounds, the instructional designer must be sensitive to the

meanings that are constructed collaboratively within the larger culture of the project and smaller culture of the design team. DeBloois makes reference to this aspect of culture-building in identifying *language* as an artifact of the process:

> Teams of individuals.. .must interact throughout the design and development process. Each individual member of the team must give and receive information which will result in a cohesive and polished system of instruction... .Designers must extend their ability to speak the language of the other specialities in order to gain standing with other experts on the team, (p 49)

In its conception as a systematic, ends-based process, instructional technology has supported the delivery of the fixed knowledge base of the dominant culture across time and space. Replicability and reliability issues have reflected a view that means that an instructional product, once designed, can be reproduced endlessly and used repeatedly, resulting in the same outcomes regardless of context. Taylor and Swartz (1991) ask "how will this worldview of instructional technology serve the members of an alternative knowledge community who expect people to collectively engage in the creation of knowledge? How will instructional technology respond to the requirements of fluid, multiple knowledge structures negotiated at the local level?" (p 61). In our opinion, turning the perspective around from focus-on-product to focus-on-process legitimates the artistic, constructivist nature of knowledge-building communities such as interinstitutional collaborative instructional design teams.

Collingwood (1938), cited in Davies (1991, p 98), contends that an activity has elements of art if the following distinctions are blurred or absent:

- Distinctions between planning and implementation.
- Distinctions between means and ends.
- Distinctions between raw material and finished product.
- Distinctions between form and matter.

During the collaborative design process, we found these distinctions increasingly difficult to maintain. In fact, this difficulty gave us a sense of unease in the design process because we started with an explicit commitment to a systematic design model. This sense of unease, or *cultural dissonance,* occurred as a result of the clash of the instructional design culture, and our own emerging *subculture* of teacher/educator/curriculum planners. At root, the rational, algorithmic nature of the instructional design culture clashed with the *interactional, collaborative, conversation-based* nature of teacher culture. In reflecting on our experiences and in noting Collingwood's characterization of *art* in activity, it became apparent to us that we were including elements of art in the design process.

INSTRUCTIONAL DESIGN AS ART

Briggs (1979), among others, has described the generic characteristics of a systems approach to instructional design. As noted below, each of these characteristics fails to recognize the artistry inherent in the process defined. According to Briggs (pp 5-18), an instructional design system comprises:

1) *an integrated plan of operation of all components of a system, designed to solve a problem or meet a need.*

Initially, we engaged in a variant of task analysis, during which we discussed the instructional problem, profiled the target learners, and identified project and learning objectives. However, we went beyond these rational tasks to identify and contract meta-level objectives such as *the Faculty of Education and Edmonton Public Schools will have a successful collaborative experience* that, later, we saw relating to culture-building in the blurring of means and ends. In this sense, problems and needs were always emerging, because the personal needs of the group members became important. Although we were institutionally accountable for the videodisc end product, the real question became *What are our ends?* In our case, the collaborative process was no less important than the videodisc product and became, in fact, one of the products to which we were most committed.

Working in a collaborative environment made it clear that the creation of an interactive videodisc is not done according to a formula. Rather, the nature of the form (interactive) and its function (interactive conversation in learning) shaped and was shaped by the form of the design process (collaborative conversation) and its function (to produce a videodisc on questioning strategies).

If an instructional design system assumes an integrated plan of all its subsystems, which assumes a prior agreement on means and ends, then the instructional systems design approach did not capture all of what we did. Instead, we found a blurring of means and ends that negotiated a balance between form and function. For us, this was a culture-building activity.

2) *an analysis of design components in a logical but flexible sequence, and careful coordination of the total effort among planners.*

This characteristic of an instructional design system fails to recognize the blurring of form and matter and of raw material and finished product that emerges during the process and redefines the process in action.

We are claiming that this blurring of form and matter becomes an art form in the building of a culture. For instance, it is impossible to tightly script classroom events not only because of their inherent unpredictability, but because classroom teaching is itself a culture with implicit codes and meanings that require negotiation for entry and exit. Although we all had membership in this culture, for the project duration we were not *in* the culture, and consequently needed to be sensitive to the social context. For example, non-interference in a sequence of

classroom events is a tacit rule understood by the design team members, but this needed to be madeexplicit to those not ofthis sub-culture. Makingsuch asocially-constructed rule explicit is a socialization process in culture-building.

Our vision of the finished product (i.e., the disc as embodiment of the final design) defined the raw material (the classroom teaching sequences). However, the raw material shaped the finished product, and in a recursive way was shaped by the emerging product (our design vision). We noted that in a culture, the artist likely has a version of the finished product in mind, but does not have a true vision of what it will actually look like when finished. That is, the raw material will almost always in some way shape the finished product.

3) *design procedures that are research-based, as far as is possible.*

This characteristic disregards the input of the designers and the collaborative, interactive nature of videodisc design in particular. The implication here is that the craft of instructional design is externalized, and thus accessible to anyone who wishes to develop this skill. However, in culture-building such as we are describing the design procedures are implicated in the means/ends dialectic. The intuitive, conversational aspect of collaborative design reminds us of Donald Schon's characterization of design as dialogue (1983).

4) *an evaluative component that calls for empirical testing and improvement ofthe total instructional plan based on tryout and revision.*

For us, the distinction between planning and implementation was blurred: Implementation was actually a design component. In addition, the physical nature of a videodisc makes it very difficult to empirically test and revise; in fact, testinganapproximationofadisc(byusingvideotape,forinstance)isproblematic because the interactive, conversational nature of the process is not represented.

5) *requirements for comparison ofthe final version ofthe instruction with alternate instruction, or in the absence ofan alternative, the value ofthe final form ofthe instruction is to be determined.*

This point is almost archaic in relation to electronic media, in which the learner controls the interaction in a self-conversation. Interacting with a videodisc is, in effect, the task of creating a new reality, building a different cognitive structure. It is the creation of a setting for conversation. The task of planning, therefore, becomes the task of creating a new reality, and it happens anew with each new project.

In our view, it is not always appropriate to think of *alternate modes* of instruction and is particularly inappropriate to compare a form like direct instruction to individual use of interactive videodisc. There is an assumption that an instructional task exists in some absolute educational culture, but the videodisc being integrated into the culture itself shapes the culture. *Value,* in this

sense, refers to the output of identifiable, skill-based "hard skills", where in a cultural sense value refers to the "soft skills" of negotiating shared meaning, for both the designers (on a team) and the learner using the product. Soft skills includes communication, negotiation, active listening, and collaborative and individual decision-making.

In considering projects that bring inter-institutional teams together to work collaboratively, we have found it helpful to think of the team-building and instructional design process as culture-building. One indicator of culture is the creation of art forms. Based on Davies' discussion of Collingwood's distinctions, we have argued for an interpretation of our design process that features elements of art, as well as of craft and science.

PROMOTING CULTURE-BUILDING IN AN INSTRUCTIONAL DESIGN ENVIRONMENT

The creation of art forms is commonly recognized as a culture-building activity. However, there are other indicators of a culture-building process that were present in our collaborative design efforts. Among these were the use of existing tools, such as an electronic flowcharting program *(Easyflow)*, and the creation of additional artifacts as design tools, such as a database that functioned as both a videodisc planning form and scripting device. Cultures have always been characterized by their knowledge systems, of which *technology* is one. The creation of artifacts in this system contribute to a *technology of design* that is then available for use in other instructional design contexts. Artifacts can be tool-like, others carry meanings that are understood by members of the culture, such as icons; others are symbol-systems, such as specialized language. Artifacts are more than features in a "getting-things-done" environment, they are an integral part of an emergent culture. That is, knowing something about the artifact recreates a whole domain of meaning, an entree into the *sacred stories* (Crites, 1971) of instructional design. The tools become part of the solution to a problem, for example, the creation of an electronic planning form on a database. Not recognizing these artifacts as tools that are culturally-embedded leads to them being imposed on novice design team members, very often the content expert.

In addition to serving the instrumental purposes of instructional design, the creation and use of these systems perform a specialized function in culture-building, that of lubrication for the *social wheels* of the process. Encountering people who don't share these symbol systems with their attendant meanings is disconcerting and immediately identifies them as outsiders. Within the core design group this was not problematic because we had all come from teaching backgrounds. However, when the group expanded to include the production crew, aculture clash manifested itself in difficulties we had communicating our cultural knowledge of the teaching process as represented by the script/descriptions of the intended video sequences. Hence, for collaborative instructional design projects,

which typically bring together a large number of people from disparate backgrounds, the use of symbol-systems within an emerging culture can be either an *inclusionary* or an *exclusionary* process for the individuals involved. In this regard, the instructional design field is no different from professions that create jargon as an exclusionary device. So, from a culture-buildingperspective, symbol-systems must be explicated as the language of the imminent culture and seen to emerge from the needs of the team.

A creative social process like collaborative instructional design can be risky, often requiring personal change (Naidu, 1988). Cultural rituals can be sources of comfort in a new and unpredictable situation, e.g. you know what to do next. In a static culture it may be the case that rituals are vestiges of earlier formal procedures that were once imbued with meaning. In the rational, algorithmic view of instructional design, legitimate procedures such as *task analysis* and *formative evaluation* may become ritualized and invoked unthinkingly: they become the sacred stories of instructional design. We suggest that in a view of design as-culture building, rituals are dependent on the shared social context for their meaning. In fact, in culture-building rituals are *created* to meet emerging needs. In our project, formalized *perception-checking* at the start of each design meeting became a ritual that bridged our worlds of teacher/educator/curriculum planners.

CONCLUSION

In this paper, we have talked about *acculturation* and *culture-building*. For us, the primary difference lies in the *intentionality* of the process. In acculturation, intentionality is easily recognized and accepted, whereas in culture-building intentionality is not necessarily apparent or expected. Although enculteration has not been discussed, there is a recognition that involvement in this collaborative project has resulted in *videodisc enculteration* for the team members. That is, there is a growing appreciation for the structure and potential uses of the technology, which was an intended goal from the beginning.

We have proposed an alternative to the view of instructional design as a rational, systematic process. Approaching the process from the perspective of culture-building provides a different lens through which to see the creative nature of the activity. Admittedly, many successful instructional products have been crafted from systematic activities based on prescriptive design models, but these processes ignore the essential humanness of the educational endeavour. In an age of increasing technological applications in education it seems important to preserve and encourage the view of human beings coming together in a creative act of culture-building. In thissense,theprocessstartsanew with each gathering. So, although we reject a top-down, hierarchical prescription for successful culture-building, that is not to say that nothing can be done. On the contrary, we believe that being conscious of the personal nature of the process will *surface* and make problematic a craft-oriented design approach. We sense that from this will

emerge a more honest design that is faithful to both the original instructional problem and the individuals involved.

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AUTHORS

Katy Campbell-Bonar is an Instructional Designer at the University of Alberta, Edmonton, Alberta T6G 2G5.

Alton T. Olson is a Professor of Secondary Education at the University of Alberta.

In keeping with our collaborative world-view, the order of authorship is alphabetical only and does not reflect the magnitude of contribution to the finished product.