

A Constructionist Approach to Values through On-line Narrative Tools

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Abstract: We live in a society where concepts of self, family, community and "what is right and wrong" are constantly changing. Therefore there is a need for learning environments that encourage children to actively explore their identity as well as the personal and social values they live by. Computational tools have potential to foster learning about these issues. However, there has been little research in this area. The few existing technological environments address values as a decision-making problem. In this paper

I

propose a narrative approach, based on a constructionist way of learning about the connection between identity and values. The research looks at how on-line collaborative environments can become tools to

think about moral and identity issues. The paper also describes an on-going research project,

Kaleidostories, a computer-based narrative tool to support construction of coherence between the fragmented selves and values that populate our identity. The goal is to explore how new technologies

can

assist in children's discovery of their own selves as well as the underlying patterns of thought and behavior that connect the worldviews proposed by different religions and cultures.

1. Introduction

We live in a society where concepts of self, family, community and "what is right and wrong" are constantly

changing. Therefore there is a need for learning environments that encourage children to explore their identity and

the personal and social values they live by. However, in democratic societies, issues regarding values and education

are controversial: whose values are to be taught? What do we mean by values? How can we teach and learn multiple

and contradictory values? How do we deal with identity issues? The challenge of re-thinking both values and

education acquires a new dimension when considering the possibilities that networked technologies offer for new

ways of learning. The research presented in this paper looks at how on-line collaborative environments can become

tools to think about moral and ethical issues within a narrative-based constructionist approach.

Traditionally, values-education has been associated with religious education and moral education. In regards to

values, I situate my work within a cognitive approach, based on the metaphoric nature of human knowledge, that

Mark Johnson (1993) defines as "moral imagination". In regards to education, I position my work within

the
 constructionist philosophy of education (Papert, 1980). Constructionism asserts that people are likely to
 create new
 ideas when they are actively engaged in making external artifacts that they can reflect upon and share
 with others.
 Constructionism carries an interventionist perspective because it not only aims at understanding how
 knowledge is
 constructed, but also aims at designing learning environments to produce a mindset change.

In this paper I propose a constructionist approach to values through the use of narrative-based
 computational tools. I
 distinguish two different ways of looking at values in education, the moral reasoning approach and the
 narrative
 approach. I also present technological environments designed responding to these two different models.
 Finally, I
 describe on an on-going research project, "Kaleidostories", a web-based collaborative environment
 explicitly
 designed within a narrative-based constructionist approach to values and identity.

2. Different Approaches to Values in Education

This section explores the plurality of meanings that the word "value" conveys. Later, it presents two
 different
 approaches to address values and learning: the moral reasoning approach and the narrative approach.
 Long before
 the traditional school was set up, teaching and learning about values was one of the main priorities of
 education.
 Plato, in "The Republic" was concerned to train the character and the mind of the young Greek; the final
 goal of
 education was moral training as much as intellectual. In the old times, learning about the "outer world"
 and the
 "inner world" was part of a holistic experience guided by a mentor or tutor. The learner learned what
 was needed at
 each moment, without distinguishing between the needs of the mind or the soul.

With the emergence of the industrial revolution, a new institution was created: the school. The need to
 find a way to
 make the learner's experience uniform and universal lead to the development of a curriculum that
 specifies areas
 worthy of study. The intellectual development of the individual became the main goal of the schools,
 while the
 emotional and spiritual aspects were delegated to the family and the religious institutions. In the modern
 times and
 especially with the advent of psychoanalysis, the study of the inner world grew to include not only the
 soul, but also
 issues of identity [1](#). Today, it is widely recognized that the inner world is a complex entity, as
 complex as the outer
 world, and therefore deserves time and effort to learn about, as well as tools to explore with.

2.1 The moral reasoning approach

The American Heritage dictionary defines value: "a principle, standard or quality considered worthwhile or desirable". Value, in this sense, sometimes is used as a synonym of virtue, moral excellence and righteousness; and as a synonym of ethics, a set of principles of right conduct which stress conformity with idealistic standards.

According to some religious traditions, for example Judaism, values and virtues are intimately linked but are not the same thing <2>. Values are abstract repositories of prescribed beliefs or normative principles for personal and social action, while virtues are instantiations in concrete experiences in the world. Values are associated with ethical principles, for example truth, while virtues are associated with behaviors and concrete practices, for example, being honest.

According to a Jewish approach to values education, the emphasis is on practice, the moral deed, and not only on contemplation, the moral thought. Religion and morality are an organic unity concerned with the development of a lifestyle, mindset and behavior system (Chazan, 1980). Within this perspective values and identity are intimately linked. This link is not so obvious in secular approaches to moral education that are concerned with the development of ways of thinking about moral issues.

For example, according to a secular philosophical tradition, the teaching and learning of ethical enquiry is fundamental to enable students to recognize what is of worth and to improve their judgement. Matthew Lipman proposes a program of ethical inquiry within which to apply reasoning skills to value problems (Lipman, 1988).

Within this perspective, ethical inquiry has to happen in the context of philosophy, a discipline specially well-equipped to engage concept-formation skills.

Psychology has also focused on values. Lawrence Kohlberg extended Piaget's framework and studied the stages of the development of moral reasoning in teenagers and adults. The stages that Kohlberg identifies start with value judgements of a highly egocentric form, followed by a decentering process. The final stage is reached when abstract moral principles develop. Kohlberg's stages resemble Piaget's in the sense that the highest stage of development involves abstraction (Papert, 1987). Carol Gilligan (1982) complemented this work by focusing on how women construct the moral domain and how they approach and resolve dilemmas in a different way than men.

Computational environments have been developed to help people explore the complexity of moral dilemmas. For example, Tammy Berman at the ILS (1995), had began the design of an ASK-system based on kid's moral dilemmas and their reasoning about them. The key function of an ASK systems is to help users get the information they need to solve their problems as easily as possible. Other examples of technological environments aimed at exploring moral issues, were developed by Robert Cavalier and his team, from the Center for the Advancement of Applied Ethics at Carnegie Mellon University. They created a CD-ROM, "A right to die? The Dax Cowart Case"(Routledge, 1996), to explore case-based moral reasoning in relationship with Medical Ethics. Similar efforts have been done by this team to create other CD-ROMs such as "The issue of Abortion in America" (Routledge, 1998) The goal of these type of environments is to support moral reasoning and problem solving. Therefore, the link between identity and values is not as stressed in these types of experiences as it is in the religious approach to values education.

Although different in the link they establish between identity and values, the religious, the philosophical and the psychological positions revised here are part of what I call the moral reasoning approach to values in education. The emphasis is on argumentation and logic. This approach is grounded on what Mark Johnson defines as "Moral Law folk theory" (Johnson, 1993). By this, Johnson means "any view that regards moral reasoning as consisting entirely of the bringing of the concrete cases under moral laws or rules that specify 'the right thing to do' in a given instance." A different approach to values in education, the narrative approach is presented in the next sub-section.

2.2 The narrative approach

The narrative approach is grounded on what Johnson calls "moral imagination". It is based on the metaphoric nature of human reasoning and on previous work on metaphors as grounded in bodily experience and as structured by various kinds of imaginative processes (Lakoff & Johnson, 1980). Within this framework, moral imagination implies that the way we frame a situation will depend on which metaphorical concepts we are using to categorize it.

The narrative approach to values stresses that, as Johnson points out, "only within a narrative context can we fully understand moral personality (the self) and its actions." Narrative has become a tool highly utilized to teach and learn about values. For example, in traditional experiences, the authority (the teacher, the curricula, the

community,
 the institution) presents to the children stories, such as fairy tales or myths, that introduce universal
 human values
 (Bennett W, 1993). For example, historical or religious figures are used as role models. However, many
 of those role
 models are far removed from children's everyday experiences and become empty vessels, with no
 invested meaning
 from the part of the child, and rarely accomplish the envisioned identification process.

Values are grounded on stories illustrating a static list of "do's" and "do not's", abstractions that
 children can repeat
 by heart, without linking them to their personal or social context <3>. In religious education, this is one
 of the biggest
 problems. For example, a student says that people have to share their food with those who do not have
 (like Jesus
 did) and gets an "A" in her charity essay. During lunch at school, however, she enjoys herself throwing
 bread to her
 classmates sitting at further tables. The problem has nothing to do with Melanie being "good" or "bad",
 neither with
 her information level. The question is an experiential one. Within the constructionist approach that I will
 present in
 later, values are associated with concrete action and not just moral argument.

Our identity is defined by how we behave and the actions we take in the world and not only by who we
 say we are.
 This emphasis on behavior and not only on knowledge is very important to frame our constructionist
 approach to
 values (Bers & Bergman, 1998). Our identity is composed by a plurality of co-existent and disparate
 selves <4> that we
 acquire from others with whom we may or may not interact in a direct way. We contain a multiplicity
 of
 "internalized others" who serve as models for action in the world, and who may not necessarily
 harmonize with each
 other (Gergen, 1991). How do we create a sense of coherence between these multiple selves? Narrative
 has a major
 role in this task.

Narrative serves a double-edged descriptive and constructive function with respect to identity.
 1) Descriptive function, because it supports the finding of coherence between the diverse stories of our
 experience,
 thus allowing us to have a coherent life story to present to others and to ourselves (Linde, C. 1993). The
 descriptive
 function is embodied in self-description genres such as conversational personal stories (Miller, P. 1990)
 and
 autobiographies (Bruner, 1987) and allows the organization of the facts after they occurred. 2)
 Constructive
 function, because it enables, through external dramatizations, to play out our chorus of voices and
 diverse roles in
 the world. Both the descriptive and constructive functions serve to help us to understand the role of
 narrative in the
 process of identity construction.

Some researchers (Schank, 1995) propose narrative as a fundamental constituent of human memory, knowledge and social communication. We can't access the facts, all we can access are stories about those facts, told by our different inner voices. To put together those stories and voices in a coherent way is a construction process that leads to deeper learning about our identity. As I will explain in the next section, this process can be facilitated by technological environments specially designed to help us think about values and identity.

3. Constructionist tools to explore values

As the constructionist theory of learning states, we learn better when we create or construct our own meaningful artifacts to reflect with and to share with others. In the same way, we learn better about our identity and our values when we are actively engaged in the process of re-creating our role models and stories. In order to engage in this meaning-making activity, computational construction kits can support children's design and construction of their own projects (Resnick et. al, 1996). However, although extensive work has been done within constructionism on creating tools, such as Logo and Starlogo, to help children think in different ways about sciences and mathematics (Harel and Papert, 1993), little work has yet been done on designing technological tools, such as SAGE, that help children learn about themselves (Umaschi & Cassell, 1997). Research is needed to explore the benefits of the computer over traditional media such as paper and pencil, role-playing games and puppetry, frequently used in therapy to help people learn about their identity <5>.

The recent increase of home-pages, chat-spaces, 3D worlds, MUD's and Internet-based role-playing games is producing a growing amount of research on "identity in cyberspace". For example, Sherry Turkle (1995) proposes that the "Internet has become a significant social laboratory for experimenting with the constructions and re-constructions of self that characterize postmodern life." Some of this research claims that virtual worlds might help people explore identity. However, a distinction needs to be made between tools that allow the expression of identity and values and tools that support their exploration.

Webster dictionary defines to express as "to make known"; for example, a home-page might be created in order to say to the rest of the world: "This is who I am." In contrast, to explore is defined as "to search through or into"; for example, the construction of a web-based family-tree might be used to learn more about roots and genealogy. The

distinction is in the degree of personal or social transformation achieved using the technology. While the technologies for expressing identity are mainly directed towards the others, to make known who we are, the technologies for exploring identity are mainly directed towards the self. The goal is to help the individual (or the group) to search through or into their own identity; to become self-aware anthropologists. Therefore, a careful look at on-line environments is needed in order to distinguish between their potential to help people express and explore identity.

Sherry Turkle, as a psychoanalyst, distinguishes between using the Internet, more specifically MUD's, to act out and to work through situations. "In acting out we stage our old conflicts in new settings, we reenact our past in fruitless repetition. In contrast, working through usually involves a moratorium [6](#) on action in order to think about our habitual reactions in a new way". Perhaps the key to distinguish between expression and exploration of identity is the degree of self reflection involved in the activity.

Within a narrative-based constructionist approach to values, is very important to utilize technologies especially designed for identity exploration. The Internet opens up the possibilities to not only host Microworlds, safe environments to explore "what if" questions, but to also connect children from a variety of backgrounds so they can explore their identity and values while engaged in shared activities.

3.1 An example: Kaleidostories

A technology for identity exploration needs to have an embedded mechanism to allow the user to gain insight into his or her behavior. Self-representations that take a long time to build up and that allow for complex representations of identity are more likely to become good technologies for self-exploration.

In order to avoid technocentrism, while designing technological tools for learning, is important to always keep in mind the question: "what can people do with the technology?", as opposed to "what the technology can do to people?". Kaleidostories [Greek kalos (beautiful) + eidos (form) + stories] is a construction kit explicitly designed in order to explore identity and values within a narrative-based constructionist approach. The name was chosen in order to reflect the metaphor of the kaleidoscope, in which loose bits of colored glass between two flat plates and two plane mirrors, change positions and get reflected in an endless variety of patterns.

Kaleidostories is an on-line environment containing loose bits of colored stories from children from different cultures and religions. The bits are placed so that changes of the stories are reflected in a variety of value patterns. The system runs in an NT Java-based Web-server and it is implemented in Java. Data entered by the children is stored and recovered from a data-base using Java servlets. The patterns visualized on the kaleidoscope are generated run-time by queries to the data-base. Kaleidostories is in its final stages of development and different on-line studies and local workshops with pre-teen kids are planned for the end of the summer.

The goal of the studies is to explore how children from different backgrounds create complex on-line representations of themselves by choosing a variety of role models, telling their stories, and exploring the values that they admire from them. The hope is that, while creating their own meaningful narratives, children will start as engage in activities to explore shared values. The metaphor of the kaleidoscope allows participants to visualize patterns and stresses the importance that the point of view plays in assessing a situation (see figure 1).

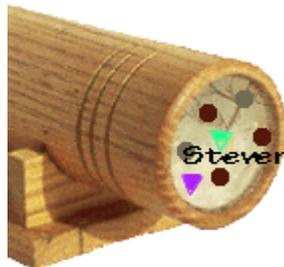


Figure 1: Each child is represented by a red star with a growing number of points. The star changes its shape according to how many role models are shared between the logged user and the other participants in the activity.

The color of the star changes according to the number of shared values.

At any point, children can look at the kaleidoscope and browse the creations of other participants as well as engage in on-line discussions and post messages. Kaleidostories was designed so children can participate in a variety of both on-line and off-line learning experiences:

- **introspecting:** children use different multimedia to create an on-line portrait of themselves including stories, pictures, links to other web-sites, etc.
- **extrospecting:** children reach out to their families and communities and interview their own role models. Later they create their role-model's portraits, either by editing the interviews or by imagining conversations with them. They tell stories about them, photograph their favorite objects and make relevant links to other sites on

the Web. An important aspect of this experience is that the stories written by the children must reflect the characteristics (values) that they most admire from their role models.

- **concretizing**: the system offers a list of abstract universal values (such as friendship, justice, responsibility, etc.) and children have to link them with relevant personal stories and definitions that ground those abstract concepts in concrete situations.
- **comparing**: children can explore each other's role models and compare values and definitions while using the kaleidoscope to visualize shared values and identity patterns.
- **communicating**: children can contact each other and engage in a-synchronous communications about both the process and the products within the Kaleidostories experience.

For example, here is a made-up scenario of the flow of an experience done by Martin, a 12 year-old Argentine boy.

First, he created a complex representation of himself by making a home-page with a short autobiography, pictures of his favorite soccer players and annotated links to other web-sites. Second, he created four role models: zeide (his grandfather), Maradona (the Argentinean soccer player), Rabbi Katz (the young rabbi who is preparing him for his Bar-Mitzvah) and Andy (his older cousin). For each role model he wrote why he chose them, different stories about their lives and their favorite objects, as well as he included pictures.

For example, he accompanied the picture of an old wooden hammer with the following story: *"My grandfather loved to build things and he had a very nice hammer [?] The nice thing about that hammer is that he showed us how to use it. He didn't mind that we were young and that our parents didn't want us to use it because they were afraid that we would hurt ourselves. He would always teach us how to use the hammer and then he would let us use it to build our own things. I couldn't keep the hammer after he died because my cousin kept it and he promised to lend it to me anytime I want. But I don't want it anymore because zeide is not here to help me use it."*

Martin matched that story with the value "sharing" from a list of values offered by the computer. After reading several definitions of the value "sharing" posted by other kids, Martin added his own: *"Sharing is to give to others what you would like to keep for yourself. People share because they like each other."*

After doing a value-matching game with several stories and role-models, Martin engaged in the second phase of the introspective personal experience. He wrote a piece about how he would like to be seen, in the future, as a role model.

All along the process, Martin used the kaleidoscope as an interface to access other children's creations as well as to post messages to their clipboards. For example, while looking at the kaleidoscope, he realized that there was another kid, Stephanie, who had exactly the same star shape and color brightness. While browsing her creations he discovered that she was American and that she also had her grandfather as a role-model. However, the

reason was a
 very different one. Stephanie admires him because he fought in the war. In Martin's opinion, to fight is
 not a value,
 so he decided to contact Stephanie. The two kids engaged in a long-lasting discussion about the value of
 fighting in different contexts and with different goals.

The evaluation of Kaleidostories will be based not only on the archived-products done by the children,
 but also on
 the types of conversations evoked by participating in an experience with children from very different
 religious and
 cultural backgrounds. The hope is to evoke conversations about the inner world and to provide a forum
 for
 thoughtful exploration of values. The goal is to provide a learning experience in which values are not
 only the result
 of logic-based reasoning, but are depending on the narrative framing of a conflicting situation.

4. Conclusions

We are not born "being" but we "become". Neither identity, or values, are a stamp put on our forehead
 by our
 ancestors. They are dynamically changing concepts, resulting from personal and social constructions in
 our
 everyday lives. Different disciplines, in both the humanities and the sciences have created conceptual
 and
 technological tools to explore the inner world. Most of this work understands values with a moral
 reasoning
 approach, focusing on problem solving, dilemmas, and logic. With the exception of religious education,
 most of the
 work done within this approach does not specifically link values education to identity exploration. As
 opposed to the
 moral reasoning approach, the narrative approach proposes stories and metaphors as the basis for our
 moral
 imagination.

Within this narrative approach, I proposed a constructionist perspective to understand values as personal
 and social
 constructions grounded in concrete contradictory and diverse identification models. Values are a
 dynamic context-
 dependent collage of actions grounded in personal, cultural and spiritual role models and not only a
 static abstract
 formula passed from generation to generation. My contribution is twofold, to explore a different
 theoretical
 framework to re-think values and education, and to provide design recommendations for technological
 environments
 to learn about our identity and the values we live by. Kaleidostories is an example of an on-line
 environment
 designed to specifically explore, and not only express, the world of identity and to evoke conversations
 about

powerful humanistic ideas. Future work will explore how the tool was used by children in controlled-studies and will report results of the research.

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5. Acknowledgements

I am deeply grateful to my advisor Seymour Papert, for encouraging me to pursue an area of research that is personally meaningful and that has been mostly neglected by researchers in the area of computers and learning. I also thank Mitchel Resnick for many good conversations about these issues, Aaron Arakawa for his great work on the implementation of Kaleidostories, Aaron Valade for his HTML design and Claudia Urrea for her readiness to discuss both technical and theoretical issues, always and at any time. I am also grateful to members of the Epistemology & Learning Group and to Josh Bers for correcting the English in this paper and pushing me to make things explicit.

<1>In this paper I define identity as the zone of mediation where meaning and values are constructed. The values we live by are key aspects of our identity.

<2>Every theological and philosophical school defines values, ethics and virtues with a different perspective. The Jewish position that I present here is based on the existentialist philosophy of A.J. Heschel which states that one of the spiritual problems of our times is the negation of transcendence (Heschel, 1987).

<3>This same problem, too much abstraction and not enough concreteness, is also observed as one of the main problems children face when learning mathematics.

<4>Mary Gergen (1997), defines this selves as "social ghosts" ? people removed in time or space, fictional characters, imaginary friends and other possible entities with whom we engage in private imaginary conversations.

<5>In this paper I use the words exploration and learning as synonyms. They are the process of knowledge construction within a social and affective context.

<6>Sherry Turkle borrows Erik Erikson's notion of moratorium in his theories about adolescent identity development. She says: "Although the term implies a time out, what Erickson had in mind was not withdrawal. On the contrary, the adolescent moratorium is a time of intense interaction with people and ideas. It is a time of passionate friendships and experimentation."

ICLS '98 Proceedings. Georgia Tech, Atlanta, AACE.