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Critical Thinking in a Digital Age: Argumentation and the projects of new media literacy

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ABSTRACT: Critical thinking unites the modern university in an effort to train students across the curricular to exercise independent, informed judgment. Critical thinking is a useful tool in developing literacy in a time of dominance by the mass media. The development of new communication technologies challenge assumptions guiding critical thinking by giving rise to novel contexts for the production and evaluation of arguments. This paper examines the challenges to revise critical thinking and develop strategies for new media literacy for participatory, digital culture.

KEYWORDS: argumentation, critical thinking, digital age, distributed reasons, memes, participatory culture, reflexivity

1. INTRODUCTION

The twentieth century study of argumentation evolved paradigmatically, through many models, each distinct but all sharing generally an interest in promoting better reasoning, thoughtful exchange, and informed judgment. Although argumentation has roots stretching as far back as the classical world, modern concerns with practical reason arise within the context of a public sphere dominated by mass communication. Preserving one's own thinking in private or with others remains an important achievement in such a culture. The market place of ideas teams with the hurly burly appeals ripe for appraisal and judgment.

The communications revolution of the 21st century appears to have leap-frogged the mass media age. According to Manuel Castells, "what is actually new, both technologically and socially, is a society built around microelectronics-based information technologies" (2004, p.7). Digital communications now makes available to the world of networked publics a variety of participatory virtual spaces, accelerating the play of reasons into even more varied forums, forms, and connections. This essay initiates an interdisciplinary discussion on the relationship between argumentation studies and the digital age. The implications of new communication technologies for the study of argument is certainly a matter of discussion, yet like most fields argumentation scholars have been slow to question the opportunities and challenges offered by new ways of

making communication. How will or should the digital age change critical thinking as a university practice? The paper examines whether the digital age puts public culture beyond the realm of argument studies, holds opportunities for incremental advance, or is a harbinger of social change that requires transformation of pedagogical practice through rethinking the emergent and novel boundaries of communicative reasoning. This paper illustrates what is at stake in reviewing the impact of the digital age. The area of critical thinking is important because of its centrality to the purpose of the modern university.

2. CRITICAL THINKING

Critical thinking is an important late 20th century movement advancing argumentation pedagogy across the curriculum. Peter Facione and his colleagues observe:

> The enthusiasm with which North America has come to embrace critical thinking (CT) as a central outcome of higher education manifests itself in university goal statements, accreditation standards, and governmental policy. Hardly a college or university in the nation would fail to identify the development of CT as a vital outcome of its core curriculum. (1995, p. 2)

This has been true to my own experience at the University of Southern California. The Committee on General Education receives a large number with great variety of course proposals from across arts, humanities, and science disciplines. The justification for each is that it expands critical thinking skills by working through a literature; and, each is evaluated on how well the proposed course achieves that end. Advocates for CT observe that the stakes of such training are high for the university as an institution.

> The educational goal of teaching students to reason well and willingly can be traced back through the eighteenth century Enlightenment, the Renaissance, the medieval focus on logical argumentation, the North African and Roman preparation of jurists and lawyers, and the Aristotelian and Socratic concerns for logic, rhetoric, and warranted assertibility. (Facione, 1995, p. 2)

Clearly, the goals of university training are put at stake by our collective capacity to foster a culture of good reasons. By inference, then, should critical thinking *not* be a sufficient instrument for the study of argument in the digital age, then the University may need to change its methods and goals.

Critical thinking appears to have been brought together in 1990 as a Delphi project sponsored by the American Philosophical Association. Facione reports that moment grew out of a 1980s movement to strengthen liberal education by stressing the "process of inquiry, learning and thinking rather that […] the accumulation of disjointed skills and senescent information" (p. 1). The report reflected a consensus view of the conferences forty-six scholars representing Philosophy, Education, the Social Sciences and the Physical Sciences defining critical thinking as

> purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based (Facione, 1995, p. 2).

Thus, CT is identified a "tool of inquiry" for developing "cognitive skills" and cultivating prudent judgment by training in flexible, open, reasonable, and appropriate argumentation. If modern disciplines gain power through specialized inquiry, powerful methods, sustained experimentation and sophisticated measurement techniques, argumentation was to occupy a similarly powerful place by virtue of its concentration on university-wide commitments to the development of skills necessary to practice self-corrective reasoning. Just as Quintilian took rhetoric beyond skill to cultivate in students the ideal of the good person speaking well, so the Delphi project posited the virtues of argument in meeting the vicissitudes of life. Inquisitive, well-informed, alert, trusting in reason, flexible, able to appreciate the views of others, honest in confronting self-bias, and thoughtful, the pulse of human reason flows through arguments which care for judgments—from the everyday, to the professions, to the public sphere.

Since the initiating manifesto of the movement, critical thinking has been the subject of debate among theorists and teachers. Sharon Bailin and her colleagues, for example, believe that much of this literature "contains a pervasive miasma of overlapping uses of such terms as skill, process, procedure, behaviour, mental operations, etc" (1999, pp. 269-270). The devil in the detail is the term "skill" which if reduced to the acquisition of a technique to serve ends would thin the ethical duty to ask questions of character, the limits of knowledge, and the complexity of attitudes. Bailin further argues that practice is only ambiguously related to the "process" of thinking, which may or not be or require critical efforts, and "procedure" which demands contextual understanding and choice of criteria, which go beyond CT to higher order knowledge. In a later reply, Facione admitted that attention to critical practice may not guarantee better judgment in every situation, but such training equips individuals with powers of decision "better than chance." Importantly, Facione updates the movement by reminding us that "creative or innovative thinking" is a facet of good thinking that extends to "popular culture" via the fine arts, and "kinetic thinking" exhibits the sort of judgment that trains the body. Indeed, diverse forms become integrated through "cognitive heuristics" or "shortcuts which, at times appear almost hardwired into our species" (2006, p. 13; 2009). Thus, stories, reactions, associations, imagined possibilities and comparisons—what a rhetorician would find in the play of tropes—become part of training in critical reasoning which in the end must be cultivated for individual survival and species success in complex urban environments (2006, p. 20; 2009).

3. THE INTERNET AND CRITICAL THINKING

The uptake of critical thinking remains, however, as a teleological model of argumentation. Judging how well reasons suit a claim appears a broad goal of argumentation studies first announced by Aristotle. How well does that model hold in a digital age? My own training is not in critical thinking, informal logic, pragma-dialectics and associated disciplines of philosophy, linguistics, or computer science. Argumentation studies in the United States was a legacy of 19th century concerned with forensic practices, filtered through public sphere studies among pragmatists at the University of Chicago such as John Dewey. John Dewey defined reflective thought as

> active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends (1938, p. 9).

This public sphere model appears confounded by a digital age. Mark Poster (1995) puts it as well as anyone. One the one side, he recognizes that the Internet has been heralded as a new, democratic public sphere because its sites promise progressively open access, diminish costs of dissemination, and network citizens without the mediation of party. The Internet has the look of a successor to the Greek agora, the New England town hall, the local church, the coffeehouse, the village square and even the street corner" which served as traditional forums of public argument. Appearances can be deceiving, however. The Net allows people to "talk as equals" but "rational argument rarely prevails, and achieving consensus is widely seen as impossible." Often, it is not even clear "with whom" one is arguing since identity is covered by persona resulting in advocacy without presence, dissent without agreement, and proliferation of views without the ritual of coming to terms. What is problematic for public argument studies, may be troubling (in different ways) to studies espousing to capture fallacies generated by traditional modern mass media or in grounding communicative reasoning in the formal/pragmatic model of conversations.

Putting the issue most generally, the Internet at one and the same time appears to extend the participatory arena of argumentation across space and time. However, even though internet exchanges appear as something like a traditional speech acts, virtual arguments withdraw the very taken-for-granted communicative forms on which such discourse is built. The structures and shape of the Internet create resemblances imitating the more direct exchanges of conversation, discussion, and dialogue on platforms with multimedia formatting that are changing, evolving, proliferating as the mix of new technologies makes possible reshaping the practices of communication across webs of virtual interconnectedness. In other words, the *differences* between the practices upon which traditional and modern models of argumentation were built *and* the experiments of twenty-first century technological novelties practices remain emergent. The communications revolution promises more varied software, webs of connection, and strategic aggregation while decreasing cost, centralization, and shortages of supply. Therefore, it is a good wager that differences will continue to grow, even accelerate as the rate of technological development continues to increase. The institutional stakes here could not be greater for the university. If Facione is correct, critical thinking is the heir to intellectual inquiry and disciplinary training going back least the last five hundred years. In the switch from analog scarcity of good reasons to digital plenty, the very models of argument grounding intellectual life need be rethought to a lesser or greater degree. Any technology revolution puts the question: have things changed fundamentally or is it only a matter of time until differences will be integrated? Indeed, communications revolutions proceed dialectically. The question to be addressed for argumentation: Are the vast spaces of the digital age simply more of the same inviting greater critical thinking, or are there fundamental differences that require rethinking of the structure and function of argumentation?

The question is being addressed, but slowly. (We generally invent forms of communication, then look backwards to see what they do or mean.) Facione in his most recent 2009 update of the 1990 Delphi report dwells on the importance of critical thinking to liberal education, and argues that such training and predisposition are keys to a prosperous modern, urban society. There is no acknowledgment that new

communication technologies impact pedagogical needs, opportunities, or goals of higher education. Institutions outside the university, however, have recognized the shattering impacts of new technologies earlier. Perhaps, librarians were initially the most sensitive to the degree of institutional change of practices that were on the horizon. In 1996, shortly after the commercial availability of the browser, Debra Jones wrote that the "information technology era" had shaken institutions to the very "foundations." Other institutions continue to undergo crisis and change as well: from the music industry to journalism to film. Systems of production and economics fell with altered patterns of use and consumption arising from digital technologies. Gaming is more valued than films in present day Hollywood. So widespread were the uses of new technologies among rising generations that critics began to ask whether "literacy" was fundamentally changing. After analyzing fifty studies, Patricia Greenfield, a distinguished professor of psychology and director of the Children's Digital Media Center at UCLA reports: "As technology has played a bigger role in our lives, our skills in critical thinking and analysis have declined" (Wolpert 2009). Visual skills have increased, yet the attention to pictures, games, and video increasingly follow "real-time" demands which "do not allow time for reflection, analysis or imagination."

New technologies often generate visions of apocalyptic change. Utopic prophets foresee promise or terror as a cresting wave where novel means eviscerates vulnerable forms of life. The typical response to new technologies is to blend new means into the old mix, however. So, critical thinking advocates have responded to the situation with incremental adjustments of the program. The Internet becomes a site where critical methods of evaluation, the core ideas of the movement, can be put up for display and directed toward usefulness. The University of Alberta Library, for example, has posted a website which explains that

> many of the same methods used to evaluate print sources, such as journal articles and books, also apply to the evaluation of resources on the Internet including analysis of subject matter, authorial qualifications, currency and completeness, as well as a special section on images and ease of use ("Evaluating…).

Similarly the library at the University of California Berkeley uses critical thinking to ground techniques for responsible reading of a Web page ("Evaluating Web Pages"). These documents are linked to similar pieces that treat Web pages to print-based criteria at Johns Hopkins and UCLA, with the exception being a set of tests for the visual availability of the sight generally and to the impaired in specific ("Evaluating"). Just as critical thinking responded to the excesses and deficiency of the mass media, so its principles can be transformed without much bother to evaluate Internet sites. In the incremental view, digital communications remains a *supplement* that assists in getting the message out to more people with less cost at a greater speed. For incremental advances of argument studies, the digital age simply means there is more work. Instead of a limited number of cable-ready television stations trowelling out mental muck, now the same skills have to be applied to television and radio's Web counterparts.

In my own view, the implications of the digital age for the study of argumentation are neither utopic nor incremental. Rather, the impacts of digital communication are transformative. New media supplement individual use and transform collective outcomes of social, institutional, and public life. Just as journalism, the music industry, and libraries

were altered fundamentally by new communication technologies—to the point where each had to experiment with its means of production and purpose—so, too, the university is an institution that will need to begin to rethink its mission in a digital world, and contemplating the changes for critical thinking is as good a place to begin as any, if indeed this project binds a commonly valued pedagogy. The question is how do we think about the transformative qualities of digital engagement of critical thinking? Cultural studies oriented scholars DeLuca and Peeples (2002) pronounce a distinct shift from training in informal logic-oriented, discursive, dialogical requirements of justification to displaying favoured showers of images, designs, and colors erupting across "screen culture."

DeLuca and Peeples take the transformative nature of new media seriously, reducing communication to media "dissemination"—spreading the word, or image, or sound clip. They deploy the metaphor of "public screen" to make fashionable the oppositional argument that takes place in the critical fashion of visual display by allied protestors, whose performances remain recognizable as contestation and whose appearances generate controversy. The telling model of screen debate for these scholars was the WTO Seattle meeting on the global economy which was met by protestors who assembled for publicity, shared little but objection to the WTO, and strove to make their point with disordering display. Written in 2002, the Deluca and Peeples' study anticipates *You Tube* argumentation this spring, where protest against the G20 was self-reproduced in clips of colourful marchers hurtling by police and sprays of tear gas in the air. Indeed the G20 *Put People First (2009), You Tube* clips constitute an oppositional argument that is a hybrid, a colourful pastiche of Monty-Python-like marching music, Marxist slogans, and stylish apparel. The stump oratory voice over of one clip intones: "it cannot be business as usual" and makes a demand "a recovery plan that includes the world's poorest nations." The recent riots in Moldova take digital argument even further. In motivating crowds to assemble, cell phones and networking sights such as *Facebook* and *Twitter* were deployed, which were in turn published on *You Tube*, thereby hybridizing the realism of the street with a globally networked virtual stage. Were these semi-articulated events regarded as models of controversy, the study of argumentation would drift away from discursive debate, dialogue, or deliberative exchange.

Proponents of critical thinking, like Edward Inch and Barbara Warnick (2001) invite us think of argument as the presentation of evidence offered in support of a claim. Whether making a judgment or deliberating with others, support is tested for grounded strength in a legitimate field and connected with care to claims that inform decisions. Claims may be true or false, right or wrong, worth acting upon or not. Arguments achieve stasis when there is sufficient evidence for and against a claim to require serious discussion of comparative merits or debate in the process of reaching consensus. Now, imagine argumentation transformed completely by the context-flattening circuits of digital connection. Like rumours that speed quickly, informally, mixing imagination and suspicion, internet claims flow mimetically, circulating into information cascades that build, draw popular attention, and just as suddenly collapse. In such movements there is rarely, if ever a moment of stasis; the point of argument is not to test evidence but to connect claims continuously, making of newly discovered events, images, or statements sign reasons that extend trajectories of contention. Tested consensus of opinion is foregone in favour of associative connections where reasons are networked in a

distributive arrangement among those finding claims interesting, even urgent, for a time—but for different reasons. As Deluca and Peeples would have it, pictures not claims appear to unify contention.

While mimetics and information cascades do characterize much of the "many to many" arguments of Web practice, it is not the case that these are its only features. The Web houses thousands of little-connected sites of advocacy practice. Sehmel (2002) deploys ethnography to visit a small group using a web site and other media to influence environmental policy. Her work examines the structure of decision making concerning the group's Website use as a means chosen to pursue advocacy goals and publicity objectives. She finds that argument is practiced but without secure measures of response, success, or engagement. When understood from a cumulative point of view, such practices circulate and are aggregated into larger discourse formations. The digital world lowers costs of participation and reduces the numbers necessary to wage a public campaign. Web designers can creatively vary, invent, stylize, and advance a point of view in the search for attention against competitors. Argument matters, even if conditions of validity, rigor of form, and capacity to prove—the hall marks of critical thinking—are obscured by moves to connect with draw attention that draws interest.

4. NEW MEDIA LITERACY

Henry Jenkins advances a new media literacy to take into account the unique features of contemporary public culture. He believes that the digital age is generating a fundamental shift to "participatory culture." Noting the large quantity and variety of experimental sites of communication, he defines such a culture as one

> 1. With relatively low barriers to artistic expression and civic engagement 2. With strong support for creating and sharing one's creations with others 3. With some type of informal mentorship whereby what is known by the most experienced is passed along to novices 4. Where members believe that their contributions matter 5. Where members feel some degree of social connection with one another (at the least they care what other people think about what they created (2006, p. 7).

The result for those growing up digital is a process of establishing affiliations with members in online communities, inventing new forms of expression ["such as digital sampling, skinning and modding, fan videomaking, fan fiction writing, zines, mash-ups)"], collaborative problem-solving, and circulation.

A participatory culture has room for traditional commitments to skills in critical thinking as a form of testing evidence and readying judgment for problem-solving. Such communication also is generative of expression, formative of communities, and collaborative in building up novel exchange. In this world, I would add, argument is a form of critical production, thematically extending or twisting positions rather than classifying of evaluating claims. Such productions may resemble but are not reducible to reasoning processes evoked in social exchange. The space and time of participants network into connections among avatars is a self-multiplying extension of and divergence from the given contexts of reason in an actual social world.

The following key terms and observations are offered not as a complete program of revision, but as part of an ongoing conversation developing in different ways, globally

across disciplines and fields. This is an attempt to thumbnail contexts of participation for a digital age. The list is a starting point to begin to produce theories of argument that take into account developing contexts of digital communication.

Reflexivity: The digital age switches characteristic epistemic work — from building information to fill knowledge gaps to promoting and dealing with information surpluses that continue to proliferate and vary. In the digital age, information does not stand still; self-feeding systems circulate, network, and multiply continuously. To take into one's life a communication technology is to become part of a system of planned and unplanned changes that demand time, shape communication, advance and limit interactions. A key feature of critical thinking becomes a reflexive turn to understand how self participation draws from, alters, and evolves expectations of reasonability in aligning with others who imitate tradition or pursue novelty. Argument spreads as controversies expand reflexively against virtual crowds whose behaviour defines the reality of situations within whose arcs one participates.

Distributed Reasons: Traditionally, two-way argumentation is thought to be embedded in contexts of a private talk between intimates, a discussion among members of civil society, or a brief issued to public audiences about public policy. Distributed argumentation does not have any particular context, but finds its rhythms of ebb and flow. Contention evolves, points get remade, and the mix of expressed interests turns to other networks within which to embed themselves in acts of claiming and counterclaiming. Reasons are not so much disciplined by grounding as connected across barriers in ways that stretch, break, and re-connect bounded contexts.

Blended Form: The digital age renders problematic generic distinctions in the forms of argument production and reception. Western pedagogy traditionally emphasizes the making of communication by learning distinct conventions of reading, writing, painting, dancing and other forms. Mixed media is the exception not the rule on interconnected, digital platforms. Nonwestern cultures have traditional spaces for mixed media that possibly could inform digital aesthetics. For example, the Tales of Ghenji art in Japanese art blends stories, writings, graphics, cultures and visual figures on paintings that retell the tale. Critical thinking needs to evolve models where multi-mediated forms assert arguments that are in some measure reduced when translated to a singular discursive form.

Network Imaginary: The line between critical thinking and creative thinking is thinned to the point of erasure in the digital age. In the traditional model, critical thinking is traced back to Plato's dialogue or to Aristotle's prudential reasoning, each model designed to improve thinking as insight or habit. To understand digital age thinking, we need to bring out a fuller *Paedia* including the Sophists and Isocrates. The Sophists, immigrants from Asia, imitated the style of the polis and innovated presentation for the pleasure of crowds. Isocrates built from this a call to a more powerful cosmopolitan style. Critical thinking needs to move forward to engage with difference that is displayed, either in the domestic world where imitations offer novel interpretations of traditional forms or in the international arena where patterns of issue transcend national boundaries. The network

imaginary envisions novel entangling connections between users with advantages imagined from reciprocal linking and interconnections among message exchanging communities.

Memetics: Memes are a preferred form of argument. Memes are visual, aural, discursive, animated elements that call attention to themselves. Like old-fashioned gossip, memes become passed on, varied, and copied for attention. Memes invite playful reflection, not considered judgment. Coherence is valued in traditional argumentation. Common ground is a feature that is important to develop to open space for agreement. In the digital age, there may be a growing preference for common cause, the linking of reasons that may not produce an integrated narrative, but will connect across groups with joint interests in a theme—although with different reasons for an anticipated outcome. The ethic of common cause situates argumentation in emergent trajectories of change where risks multiply.

Rhetorical movements augment, appropriate, or replace social movements. Rhetorical movements feature stylized, bundled arguments that promote a cause and serve needs for publicity. Such movements travel globally through NGOs, for example, whose advocates discover or create a cause. Green Peace fashioned a campaign to save the Chilean Sea Bass, for example. The tasty but endangered species was featured as a cause as much to grab publicity as to recover a fish. Rhetorical movements materialize through appearances at sites of publicity in ways that render sense making difficult and narratives fragmentary.

Elliptical Thinking: Nineteenth century models identified reasoning with formal classification moving from the general to the particular or inductively reversed. The result is a structure of reason similar to Aristotle's *Organon* that rendered nature transparent to reason and method. Unlike the representation of Venn diagrams, elliptical patterns of internet argument are not centered or centerable. Web-argumentation travels around an orbit closer to a positive or negative focus, when memes are distributed and remade to serve one polarity or another. President Bush's staged photo opportunity on an aircraft carrier after the Gulf War was photo-shopped into a parody that had Osama bin Laden standing under the banner, "Mission Accomplished." Standing controversies thus are sustained as events, and visual, gestural, discursive arguments are remade in the orbits of pro and con contestation. Controversies have a self-organizing quality to them where the attraction of a pro-con pair may draw into it disputation for a while, only to be attracted to another double-foci of exchange.

Self-Organization: Institutions adopt digital means of communication to create faster, fuller, and better connections among participants who seek, record, use, and evaluate information. Digital means of communication are constituted in self-organizing networks that supplement and advance older institutions. Digital supplements to institutional practice resituate relationships between providers and clients, however. Medicine is now made accessible on the Internet, even without much understanding of how half-trained patients and institutionally grounded doctors will now exchange reasons. Norms of argument thus self-organize across institutions in emergent patterns over time.

Avatar: Tests of credibility, appropriateness, and soundness are no longer the strict measures of reasonable contact. The power of a figure in virtual space is embedded in the avatar which makes an appearance. One communicates across a screen. *Facebook* platforms network private lives or at least the versions of private lives that quasi-anonymous sources wish to be seen. Video games and social exchange merge and blend with online persona striking poses. Online presence is crafted by mixes of platform options, actions exhibited through figures, and commentary or exchange. Interest, connection, and discovery presumptively trump trust, sincerity, and relevance in digital communicative exchange.

Argument Games: The Internet makes available massive sites for multi-player participation in virtual games. Arguments spread in game-like fashion as well. An argument game pushes across pro-con responses, becoming reproduced and varied by semi-anonymous bloggers who may engage in parody, ruse, disruption, or naïve posturing. Games can be played singularly yet participation is aggregated collectively. Games go in and out of fashion quickly. "Throw a Shoe at the President" games, for example, quickly followed the last George Bush press conference in Iraq where a journalist did just that. Argument games can furnish commentary played out against strategic activities such as investing, private entertainment such as card playing, or in exchanges in online simulated worlds.

5. CONCLUSION

The anticipated uses of technology are never those that precisely evolve. As new communication technologies become cheaper, with more varied functions, and become stylized to suite the connective flow of group interchange, the means of producing and testing embedded claim-making will change. Mass media framing may go the way of endangered species, but the evolution of micro-frames, participatory give and take, and elliptical transformations will spread. If the university is to persist, its class rooms must be transformed into sights of production featuring innovative critical response in dynamic temporal configurations.

The vast array of digital communication technologies developed, disseminated, and networked since the turn of the 21st century are stimulating new local uses and globalized patterns of argumentation and controversy. Just as movable type influenced the production of texts in the fifteenth century giving rise to modern practices of expertise, politics, and human relationships, the World Wide Web, the Internet, and mobile technologies promise transformations in patterns of human thought, systems of reciprocal exchanges, and networks of social relationships. The position advocated here is that digital technologies should not be understood either as holding utopic promises or as incremental opportunities to expand business as usual. Digital communications uses constitute transformations of personal lives, professional institutions, and public life. This essay argues for initiating inquiry where (l) the conjunction of modern communications technology and controversy are blended and evolving, (2) configurations of argumentation hover reflexively between reality and the imagination, (3) the qualities of communicative reasoning, while in part critical, produce rapidly changing, multi-formed games of argumentation, and (4) the altered status of expert institutions, including the

university, assume new communicative relationships within organizations and between providers and clients. These new age challenges are transforming the possibilities of practice, and with such changes are invitations to rethink contexts upon which the broader field of argumentation studies was built and to find emergent new opportunities for intervention.

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