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Do media influence learning? Revisiting the debate in the context of distance education

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In this article Vicki Carter, Instructional Programmer at The Pennsylvania State University, reviews the academic literature of distance education which has considered, whether the media and technologies of education affect the learning which takes place. She finds that the conventional answer, especially from a North American perspective, is in the negative, despite a minority who assert the contrary. While the author argues in conclusion for the second of these positions, she suggests that the frames of reference used by distance education have been too narrow, and that valuable insights can be found in the fields of neurology and mass communications, as well as in feminist approaches to the situated nature of knowledge.

For over a decade there has been an ongoing debate about whether or not media do, might, or ever will influence learning. Found for the most part in the research and publications associated with educational technologies and instructional systems, two main protagonists in this recurring discussion have been R.E. Clark and R.B. Kozma. Clark's analogy of media as vehicles delivering groceries (i.e. instructional methods)but having no influence on nutrition (i.e. learning) has often been referenced in distance education literature. The overriding position of distance educators towards this debate has favoured Clark's 'mere vehicle' view toward media influence on learning. Moore (1993), in his call for greater attention to course design, instructional development, and student learning styles, pointed out that the media of communication have received considerable scrutiny both within and without the field. However, this attention has not been directed toward learning influence, but instead toward media's efficiencies and effectiveness associated with factors such as time, cost, and availability (Holmberg 1981).

Do media merely deliver content, or are they capable of influencing learning? After being relatively quiescent for the past few years, this controversy has recently returned to the forefront. While familiar dialogues are continuing, new and different perspectives are also surfacing. Once more these issues are being argued for the most part within the venue of instructional systems (for example, see the issue of *Educational Technology Research and Development*, 1994, Volume 42, Number 2). The ramifications and complexities involved in this debate, however, are significant and meaningful for distance and adult educators. Distance educators in particular often find themselves located in technology-intensive situations, involved in the planning, design, or facilitation of courses employing a variety of media.

In order to consolidate the thinking and highlight various elements associated with media influence on learning, this paper will first review the opposing outlooks of Clark and Kozma. Second, the recent deliberations of Jonassen, Campbell, and Davidson will be introduced. Next, the positioning of distance education research with regard to this topic will be summarised, and finally additional perspectives associated with learning influence of educational technologies will be presented.

The counterpoint of Clark and Kozma

R.E. Clark (1982; 1983; 1985; 1991; 1994) has declared that educational technologies and media

deliver content but have no influence on learning. As early as 1982, Clark asserted the learning-via-media question was a 'dead issue' but was perpetually resuscitated even 'in the face of overwhelming evidence that the generic question' had no validity (p.60). Since the early 1980s Clark has persevered in his exploration and evaluation of research and data related to this question. In 1994 his stance was a definitive proclamation that media will never influence learning.

Clark has used his own research as well as data from other studies to support his position that economies of cost and speed, but not learning, resulted from different delivery technologies (Clark 1994; Lumsdaine 1963). As Schramm (1977) explained, methodology and content provided via a medium, not the category or type of medium, were the variables contributing to learning. According to Mielke (1968) and Clark (1994), in any well-designed comparison studies which contrast a variety of media treatments, no substantial differences in learning outcomes should be expected. In Clark's view this 'negative' research - i.e., finding no apparent differences when dissimilar media were compared in learning situations - has been largely ignored. It has also been Clark's standpoint that too often delivery technologies were muddled with instructional technologies and methodologies, thereby confounding the outcomes of comparison studies. According to Clark's updated explanation of his position in 1994, media or delivery technologies provided access to instructional methods and strategies in a timely and productive manner, while instructional design technologies made it 'possible to influence student achievement' (p.23).

For educators who believe they have found evidence that a specific medium must be present to cause learning, Clark has suggested a supplemental question. His challenge was for researchers to determine if there were 'other media or another set of media attributes that would yield similar learning gains' (1994, p.22). This 'replaceability' issue was of critical importance to Clark's argument against media being causal in learning. His claim was that if one treatment could be replaced by another and yet achieve similar results, 'the cause of the results [was] in some shared (and uncontrolled) properties of both treatments' (1994, p.22).

Clark has stated 'any necessary teaching method can be delivered to students by many media or a variety of mixtures of media attributes - with similar learning results'. Opposing viewpoints, due largely to 'invalid but intuitively appealing beliefs,' have been and will continue to be disproved by extant studies and adequate ongoing research. Moreover Clark has maintained that in neglecting to differentiate between methods and media, educators experienced confounding problems and generated waste while continuing to explore avenues of research he described as 'triumphs of enthusiasm over substantive examination of structural processes in learning and instruction' (1994, p.27).

On the other hand, Kozma (1991; 1994) has preferred to regard method and media as integral and connected, believing that learning consists of relationships among cognitive, social, and affective processes as well as multiple aspects of the environment. Conceding that studies comparing the effects of media have been inconclusive and flawed, Kozma (1994) has proposed educators involved with media look instead toward the future and ask if an influential relationship between learning and media will exist.

Kozma (1994) spoke of a requisite immediacy to explore, even forge, a critical connection between media and learning. Part of this urgency was due to the current ubiquity of interactive delivery technologies and the imminence of other forms of delivery. For example, the majority of Americans will soon be able to access voluminous multimedia databases through interactive video, not only in schools and businesses as some of the population have already been doing, but

also direct to personal residences (Stix 1993). In addition to the exigencies being generated by technological innovation, Kozma (1994) construed learning as occurring in harmony with, and because of, a particular combination of methods, technologies, and initiatives undertaken by a learner within an existing environment.

In terms of researching potential connections between media and learning, Kozma described systemic methods and augmented analysis techniques in order to better define and judge media effects on learning. In his argument Kozma has maintained that a refraining of the media / learning question was necessary, saying foundational assumptions relating to educational technology were being re-examined. Rather than asking 'do media influence learning' Kozma has offered the following question instead: 'in what ways can we use the capabilities of media to influence learning for particular students, tasks, and situations' (p.1994, p.18)?

Restructuring: Learning with media

Jonassen, Campbell, and Davidson (1994) have responded to the exchange of views described above by seeking to restructure it in a holistic fashion. Referring to recent and sweeping changes in the science of learning psychology brought about through advancements in cognitivism and constructionism, these researchers contend that Clark, Kozma, and others have been debating the wrong issue. Clark's hypothesis that learning was located in methods directing the process of learning was viewed by this trio as narrow and out-of-step with contemporary thought. And in their view Kozma, while acknowledging the place of context in learning, has failed to consider the functions and contributions of media - as opposed to via media - within learning contexts. Rather than focus on instruction or media, Jonassen et al. have postulated that researchers and practitioners consider instead the attributes of the human being involved in a mediated learning process, a process they illustrated as being surrounded by a fusion of conveyances, teachers, instructional design, the environment, the learning context, and the social context. Within this process, learning was contingent upon context and situation. Media and technologies were part of this context, not just deliverers of context and content.

While both agreeing and disagreeing with different aspects of Clark and Kozma's positions, Jonassen et al, restructured previous discussions by presenting alternative points of view at both a macro and micro level. At the macro level they contended that learning was situationally dependent and context based, and that the learning environment 'affects the experiences of the learner and therefore defines the content of the knowledge constructed' (1994, p.31). The macro approach was substantiated by visiting the new fashioned theories of phenomenology, constructionism, quantum mechanics, and chaos. At this macro level, contemporary thinkers viewing learning processes have seen cognition as distributed among learners and their multi-strata environments. Media constituted a part of this learning context. The result, as paraphrased by Jonassen et al. was that 'cognition migrates outward into the surround. Problems, relevance, and meaning migrate inward' (p.33). Technologies assisted in the construction of learning and researchers and practitioners must explore the effects of cognition with media and technology and not continue to investigate the results of technology.

At the micro layer Jonassen et al. contemplated the human processing system, conceptualising this system as having both strengths and weaknesses in its attempts to construct knowledge. In the deliberations of this team, design was seen as 'a matter of supporting and utilizing the best the human information processing system has to offer in an effort to capitalize on its inherent

strengths and minimize its weaknesses' (1994, p.32). In other words, media were regarded as tools, but as tools which enabled cognitive resources. Appropriate selection and inclusion of educational technology media nurtured and ameliorated cognitive processing.

Gibson's (1979) 'affordances' as means of thinking about mediated learning was an important concept cited by Jonassen et al. (1994). Environmental affordances were, in ecological terms, what was offered to or furnished to an animal or human being. Technology supplied a plentiful collection of manageable and exploitable attributes or affordances. The mediation sequence influencing learning and achievement was accomplished by the progression of 'media afford attributes, which afford cognitive learning activities which afford thinking which affords learning' (Jonassen et al. 1994, p.37). Jonassen et al. considered media not solely as vehicles delivering messages or providing knowledge, but as environments functioning as affordances which furnished, enhanced, and provided communication. Media were facilitators aiding in the construction of knowledge and were deemed part of an inclusive design, i.e., 'as intellectual partners in the knowledge construction process' (p.38).

Distance education's perspective on media influence on learning

Where in this debate is the field of distance education situated? Most of the literature reviewed for this paper would indicate distance education has accepted, for the most part, the premises of Clark. And for distance educators, the issues of media influence on learning have been overshadowed by the field's proprietary quarrels over whether or not mediated education and distance education were equivalent in quality and effectiveness to traditional, face-to-face, proximate classroom education. Therefore when studies involving media were undertaken, comparisons were often between conventional classroom instruction and instruction at a distance rather than between different media or media attributes (Verduin and Clark 1991).

Distance education literature has also been interested in a debate similar to the one involving Clark and Kozma. There has been another concurrent and ongoing give-and-take among Clark and other researchers, especially Kulik and Kulik. These studies have tended to highlight achievement efficiencies gained by using educational technologies. Several of the studies, among them Kulik, Bangert, and Williams (1983) and Kulik, Kulik, and Bangert-Drowns (1985), purported to compare a variety of mediated versus traditional instructional formats and found mediated instruction more effective. Not surprisingly, Clark (1985) has claimed these studies also contained a large amount of confounding evidence, and furthermore that the sizes of the effects were insignificant. In their work, Verduin and Clark (1991) remarked upon a comprehensive collection of media comparison studies. Primarily they did so to examine the value and effectiveness of mediated instruction, and not to examine media influence on learning. The comparisons introduced by Verduin and Clark supported equivalence of effectiveness between traditional and mediated instruction.

Stone's (1990) discussion of non-interactive television's effectiveness was again directly concerned with the legitimacy of the distant versus the traditional classroom. Stone referred to the debate over media influence as less germane than that of promoting faculty ownership and participation in distance education. Bok (1985) reported on computer-assisted instruction,

indicating learning improvements disappeared when both preparation time and instructor were the same for an experimental and a conventional class. Lewis commented on the unfinished theory-building occurring in adult learning, an activity necessitating additional evaluation 'before the increased efficacy of computers can be touted' (1989, p.616).

For the most part when media and learning questions were asked, further explorations were not encouraged. Schramm reproached educational researchers for posing 'relatively useless questions about the media of instruction' (1977, p.14), the time wasted on researching whether or not media differed in their information conveying capacities, and unrealistic expectations for uncovering any straightforward means for selecting educational media. Reiser and Gagne (1983) indicated media transmission of information did not vary in any meaningful way. Winn (cited in Hillman, Willis, and Gunawardena 1994) considered delivery techniques involved in providing information to have minimal effect on how content was understood. Duning (1987), describing the spectrum of non-print delivery modes, stated modes or combinations of modes altered both distance and traditional education, teaching, and learning, but then went on to describe these modes as vehicles. After examining television instruction, Whittington concluded that as a medium this technology transmitted communication and had 'no intrinsic effect, for good or ill, on student achievement' (1987, p.55).

Two other studies addressed media and learning but were similarly constrained in outlook. In a rare technologically-oriented article within the field of adult education, Kizzier and Lavin (1993) placed media squarely in the middle of their research agenda, but cited Clark's opinion that mediated instructional strategies did not influence the effectiveness of instruction. Gunawardena (1992), although having both described and illustrated a learner-centred model similar to Jonassen et al. (1994), viewed each component (instructor, media, content, etc.) as separate entities. These entities each affected the learner but were not only disconnected from each other but also existed separately from any social and environmental context.

Clark and Angert (1981) found designers often did not select media on a systematic or model-driven basis, leading them to postulate that designers were absorbed in the logistics of technology rather than design considerations. Wagner (1990) described a model of instructional design developed by Dick and Carey. This model was a 10-step prescriptive approach starting with goal determination and ending with a summative evaluation. In the model, selection of media occurred in the seventh step, a placement which would indicate minimal consideration of media as causal in learning or as a part of the learning context. In a definitional piece on interaction, Wagner questioned why educators placed 'limits on their own horizons' by continuing to perpetuate the view that technologically-mediated instruction substituted for 'the real thing' (1994, p.8). Wagner followed those moderately progressive thoughts, however, by stating well-designed instruction was 'more likely to bring about a desired change in human learning and performance than [was] technology, regardless of the types of technology used' (pp.8-9).

Many of the foregoing examples indicated non-unexpected concerns with transmission or delivery

of content. Most of the literature found media did not influence learning and discouraged further inquiry on the topic. As representative of the viewpoints expressed by distance education theorists, this body of literature did not describe or support, as Jonassen et al. suggested, an

enlightened learner-centred approach nor did it consider media to be embedded within a learning context.

Although the preponderance of thought in distance education was in accord with Clark, there were a few divergent thinkers. For example when Hillman, Willis, and Gunawardena (1994) discussed the addition of learner-interface to the learner-content, learner-instructor, and learner-learner interactions previously defined by Moore (1989), they expressed disbelief that the efficacy of the communication provided by technology in the learning environment would be unaffected by the media employed. Hillman et al. stated unequivocally 'evidence suggests that learner-interface interaction does affect learning' (1994, p.33). Granger pointed out there was 'as yet no body of literature making controlled comparisons of learning effectiveness achieved through different configuration of media' (1990, p.168). Granger's perspective on distance education emphasised contextual linkages in terms of understanding and strengthening of those linkages. One of the critical questions for Granger was how distance educators went about designing courses 'which render themselves amenable to individuation contextually and pedagogically' and how these designs could be accomplished 'in ways that take advantage of new learning technologies' (p.168). Granger believed, as Jonassen et al. also believed, in focusing on the individual learner situated within a particular learning context.

As the above citations signify, distance education research and literature does contain some discussion of media influence on learning. A few of these references indicated distance educators have begun to look at the issue from alternative perspectives. Nevertheless, the standpoint of distance educators was best summarised by Verduin and Clark's (1991) assertion that the field would agree there was no difference in the effectiveness of different media treatments, stating it would seem 'inevitable that Clark's view will be the more widely accepted one as time goes by' (p.96). The logical continuation of that perspective, and in consideration of the overwhelming basis for this in the documents reviewed, most distance educators did not believe that media technologies influenced learning while much of the literature in the field neither addressed nor considered this aspect of distance education to be especially important, The prevailing point of view was that the media comparison studies already completed have freed distance educators to concentrate on other arenas, and distance education research had 'moved to other areas of study' (Threlkeld and Brzoska 1994, p.46).

Widening the lens: additional dimensions

In addition to the Clark and Kozma debate and the critique of Jonassen et al. what other perspectives serve to develop enquiry into this topic and bring to distance education an awareness of its criticality? Lirt4ng the area of neurological research and mass communications, Simpson (1994) disagreed with Clark's claim that it was content, not media, influencing learning. Simpson asserted the very existence of content was dependent on media because without media, content 'could not be represented or communicated' (1994, p.75). Simpson's study as well as other theories of communication found a likelihood that permanent biochemical organisation of neural groups in the brain facilitated critical thinking and creativity. Acts of writing, and it follows acts of interaction with technological media also, may actually alter the brain's biochemical structure thereby affecting short- and long-term learning. In addition, studies of television by Solomon (1984) and Locafis, Charuhas, and Banvard (1989) produced evidence that passive media, such as television, were less likely to cause these biochemical changes. Because of the passive attributes of some media, the brain's natural learning processes were restricted. Several other research projects indicated the more interactive the media were, the more probability that leaming

would occur due to the active environment being provided, or in other words an environment able to be manipulated. Simpson concluded interactive technologies combined symbolic representations into a form of symbolic language resembling the functioning of the brain. He felt neurological evidence should be considered when studying media influence on learning and there 'should be no artificial separation of content and medium when it appears ... the two are interrelated' (1994, p.80).

Norton, writing on computer technology in education, described the computer as metaphor, dis-

course, and method. These three different concepts of media were far from a view of educational technologies as mere vehicles. Media, in this case computers, were seen as metaphors for symbol systems. Symbol systems assumed a significant role in constructing knowledge, and different systems varied as to the kinds of awareness and understanding they made possible (1992a). In terms of discourse, computers and components such as software, databases, hardware, and other attributes mediated forms of meaning by 'delimiting the dynamic between collective knowledge and individual thought' (1992b, p.39). As media exposed, described, and circumscribed individual and collective views of the world they altered habits, abilities to enquire, and the very means of enquiry. Computers as discourse, according to Norton, were different forms offering 'alternative sets of possibilities for knowing' (1992b, p.41). Instead of separating method and delivery, Norton ('L992c) saw computers as method. In her discussion of computers as method, Norton presented four 'animating ideas' including problem-centred (versus learner-centred or instructor-directed) approaches, a goal of structure and process which viewed content as the vehicle, teaching disciplines actively as a way to think about problems, and carefully selecting discourse in instructional settings by basing discourse choices on relevance. A final animating idea illustrated the importance of bringing these constructs together, because 'any technology that is used to structure, process, and communicate knowledge must be understood as a discourse form with the potential to affect what we know and how we know it (1992c, p.43).

Other experts and media critics have considered the significance of media and epistemology saying, for example, 'definitions of truth are derived, at least in part, from the character of the media of communication through which information is conveyed' (Postman 1985, p. 17). In examining theories of knowledge historically, different means of communication have been valued differently while various forms of media have required accommodations in terms of learning and ways of knowing. And so, because humans 'learn what they *do*,' often the content of instruction was the least important element of learning. Media provide frameworks for information; they have formed and moulded the culture of learning. Growth happens not only from the inside out but also from the outside in, and when ideas and information are mediated the media employed related formidably to how an idea, or the truth of an idea, was perceived (Bruner 1966; Dewey 1963; Postman 1985).

Some authors saw media, like books, as 'texts' which must therefore be regarded as replete with forms of power, contradictions, political structures, and sanctioned, legitimate, official knowledge. As such these texts presented possibilities for 'reading' in other meanings and values, transforming the intentions and practices of pedagogy and andragogy. Media necessarily involved struggles for meaning; they were the same as educational textbooks in that they did not simply and transparently convey knowledge and information. Instead media engendered examination ideologically in terms of the construction o f consciousness and subjectivity (Apple 1993; Fiske 1986).

Outside of the arenas of the qualitative, empirical, and linear are other forms of research and enquiry. Clark's (1994) assertion that a belief that media do influence learning resulted from overly enthusiastic intuition was in direct opposition to some feminist theories, for example, which value different ways of knowing, questioning and researching. Clark's statement was a clear example of devaluing and de-privileging certain categories of theory-building. In higher education, rational, analytical, empirical, positivistic research projects are usually embraced; subjective, intuitive, and sometimes qualitative ways of knowing are often not as valued (Belenky, Clinchy, Goldberger and Tarule 1986). For example, feminist theorists, some in science (specifically genetics) have encouraged interactionist and dynamic objectivist approaches to research, seeking to examine if and how knowers and phenomena related to each other and were intricately inter-dependent (Keller 1984; Longino 1993).

In his critical approach to education, Giroux (1992) has encouraged educators to consider the process of creating symbolic representations because this process specifically incorporated a need for textual, visual, and other representational analyses within a pedagogical structure. As previously described, Simpson and Norton also were engaged with symbolic representation and language. According to Giroux, the important question was how learners 'engage such representations in the practice of comprehension and significance' (1992, p.247).

Writing specifically about technology, Wajcman believed technology was a 'form of

knowledge' which shaped a 'set of human activities' (1991, pp.14-15) related not only to ways of knowing but also to ways of doing. Hawkridge (1991), another author writing on technology in education, helped substantiate a need to embrace alternative means of enquiry by describing two key values held by educational designers. Hawkridge wrote that designers ascribed importance to 'insistence upon knowledge derived from ‚rational' or theoretical sources rather than practice or intuition, and upon dividing teaching into design and execution phases' (p.107). These two values, Hawkridge admonished, tended to hide goals of managing or controlling others; they also sustained and privileged traditional forms of research and enquiry.

Clark (1994) described both media and method as technologies. Simon (1992) viewed school itself as a political-cultural technology. As part of his text on pedagogy as a form of cultural politics, and teachers as cultural workers, Simon reflected on technology. He commented that a common way to think of technology was as a vehicle or a means to an end. However, as education incorporated technologies 'such modes become the frames within which a particular ordering of the real [was] required and particular forms of productive work [were] structured and governed' (p.42). As Simon explained, because all technologies or media produced, created, regulated, and organised, they could not be viewed simply as means, or as Clark has said 'mere vehicles'.

Chaos theory supports alternative viewpoints such as Simon’s and feminist theorists. Non-linear feedback and open boundaries link systems 'with almost unimaginable complexity' (Briggs and Peat 1989, p.154) to the surround. Working with non-linear models, designers do not attempt to control through quantification and mastery of causality, but rather to build on 'intuition about how a system works and how to 'interact with it more harmoniously' (p. 1 75). Believing intuition was the key to being able to understand and make changes to very complex systems, Senge (cited in Briggs and Peat 1989) nonetheless cautioned that modelling and intuition often generated discouragement. Because modelling, insight, and intuitive processes were essentially dynamic and infinite, researchers and practitioners hoping for or assuming eventual reductionist

solutions accommodating mechanical changes tended not to persevere in the use of these processes.

As other thinkers within the field of distance education confronted these topics they illuminated a need for further interrogatory activity. Edwards concluded that current developments in society, distance education, and media literacy called for revisiting how 'to engage the specific desires of learners which are cultivated through the use of those media' (1994, p.16). Walker (1993) expressed concern with distance educations narrow perspective on the significance of context, stating one outcome of the influence of instructional design and educational psychology was separations. Disconnecting curriculum, pedagogy, production, delivery, course development, and research were 'not simply abstract or distant from the action' and these actions had 'serious consequences for students' (p.23). Walker felt media were not only contextual but a requisite ingredient of content. Curriculum and education were, as well, always and necessarily mediated and educators themselves were located inside the media. Evans and Nation believed that 'pedagogy and technology are - and always have been - fundamental and inseparable elements of education' (1993, p.198). On a simplistic level educational technologies were tools, but more importantly they were composed of knowledge, values, and practices which contributed to both development and use of those tools.

Conclusion

This brief synopsis has presented only the surface of an extremely complex and controversial issue. In his recent deliberations concerning media influence over learning, Clark (1994) has declared media will never influence learning. Despite this clearly inarguable stance, Clark's findings, reasoning, and assumptions remain unresolved. Although Clark (1991) has self-described his viewpoint as unpopular, most citations in the distance education literature indicated his positioning was mainstream.

Distance education, according to its base of literature, would regard Kozma's (1994) suggested initiative to forge a relationship between media and learning with considerable scepticism. Distance education as a field of study is clearly not resonating with the ideas of situational or contextual learning. The field has not as yet embraced even 'scientific' neurological evidence such as Simpson's findings let alone intuition or other non-

mainstream forms of enquiry. Distance education literature has limited representation of feminist theory, critical pedagogy, or postmodern critique. Evolution and effects of new forms of media were 'discussed but rarely critically analyzed in terms of broad social and political contexts' (Evans and Nation 1993, p.204).

Distance educators are not unconcerned about individual learners, effective and empowering course designs, student readiness to learn, and other praiseworthy goals of pedagogy and andragogy; this concern is evident in the written and spoken words of distance educators. Nevertheless, today's research agendas in distance education can be viewed as limited and mired in the conventional. Non-traditional research techniques and methods have found minimal favour within the field and some experts have argued that issues and effects of technology have been over-emphasised to the detriment of other important research questions, Yet potentially negative

effects of some educational technologies heavily in use today argue for proactive research initiatives on these topics in order to understand the issues and caveats involved in the potential for media influence on learning, be that influence positive or negative.

Viewing alternative forms of research as complementary approaches to traditional studies remains largely untenable within educational research in general. Opening the question of media influence on learning in any form, let alone nontraditional methods of enquiry such as those mentioned above, is not yet present in mainstream distance education thought. The question of whether media influence learning, however, is neither trivial nor unimportant. Media are implicated in epistemology, ways of knowing and sense making, and a search for knowledge, Is it not incumbent upon educators, especially distance educators who are inevitably embroiled in the arrival and dispersement of new educational technologies, to be open to exploring and integrating a variety of ways of knowing? Such receptive acts are what distance educators already hope for and expect from colleagues who study, adopt, and integrate new ways of teaching and learning, i.e., teaching and learning from a distance. While continuing to concentrate on the various subsystems and components of distance education, must the field not also attempt to perceive education holistically? A danger in not further investigating the specific question of media influence on learning is for distance education to miss critical opportunities for enriching their understanding of the learning process and the social construct of reality. In addition, distance educators would indicate by their non-interest and disregard for this question a view of technologies as non-problematic and instrumental agents in learning environments. Finally, for distance educators to continue to focus on the status quo and technical, while perpetuating separations and disconnections, presents to many of their peers a limited and fragmented approach, an approach which 'eschews consideration of the broader social and political contexts of their work' (Evans and Nation 1993, p.199).

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