Clark (2001) emphatically advocated the “weak” media theory. His chapters stressed, repeated, re-stressed, re-repeated, accentuated, and underlined this inclination repetitively. His position was clear – no single medium is superior to any other. Multi-media used in combination have no significant benefit over single media or even no media at all. It’s not what you use, but how you use it, its content and context and the motivation stimulating the learner. Clark criticized the “strong” media theory and discredited the theory because of its “uncontrolled effects.” He quoted Schramm (1977) who reasoned that “learning seems to be affected more by what is delivered than by the delivery system” (as quoted in Clark, 2001, p. 91). According to Clark, the medium is not the message, it is purely and simply a vessel for carrying the message.

Clark’s (2001) point is valid, although overly expressed. The “weak” media theory claims that particular media do not psychologically influence and promote learning and cognition. This theory concurs that media may influence the economics of instruction by conceivably reducing the cost of instruction and increasing its efficiency but nothing else. More credence is given to the motivation and mental processes expended by the learner in determining learner reasoning, intuition and perception.

“Strong” media theory advocates claim that some media have the ability to enhance academic achievement and are superior to others in stimulating learning and motivation. Clark explained that research that favors the “strong” media theory is confounded by “uncontrolled effects of (a) instructional method or content differences between treatments that are compared, and (b) a novelty effect for newer media which tends to disappear over time” (p. 74). Any alteration of instructional method and content while performing the studies will affect
its soundness. In addition, any medium that is novel to the user will have more impact on the learner until the novelty has worn off.

Clark added that effective meta-analytical research with non-medium variables such as the subject matter and the content of the instruction must be controlled and identical. The only variable that is modified in these studies should be the type of medium used. Failure to maintain constancy within the non-medium variables confounds the research and produces false conclusions as Clark claimed occurred in studies “proving” the “strong” media theory. Clark also warned that media variables are not the same as media attributes. Attributes of media are associated with more than one media, as are attributes related to printed books (chapters, symbols, illustrations, etc). For example, symbols or codes are media attributes and stimulate cognition, yet they are not limited to one medium but encompass a large variety of media. Therefore, the medium itself does not stimulate learning; its attributes such as its symbols, codes, design, content, and context determine learner cognition.

As Clark (2001) stated, those theorists who believe that media in and of itself has the capacity to influence the learners are actually confounding the research. Not only is learning influenced by the media attributes, but learner traits and variables also influence learning. The learner’s beliefs, attitudes and values determine motivation, not the media utilized (p. 80). Clark maintained that a single medium does not have unique attributes “which influence the way that information is processed in learning” (p. 76). He convinced me, over and over again!

Motivation is an interesting factor that affects learning. Salomon and Bandura developed the “self efficacy’ theories of motivation” which studied the “relationship between attitude toward media and learning is best conceptualized as an “inverted U” (p. 81). Salomon classified two “factors” that explain learner motivation: the attitude of the learner toward: 1) the task
requirements ("perceived demand characteristics", PDC); and 2) his/her judgment of skill and capability in carrying out the task ("perceived self efficacy", PSE). As in the inverted U hypothesis, performance is greatest when PDC and PSE were perceived as moderately demanding and moderately capable of performing a task. I question this theory since my personal impression is that the more aroused a student is, the more the student will be motivated and gain from the instruction. Therefore, variables such as the PDC and PSE, the relationship between arousal and performance, and the legitimacy of the inverted U theory merit further study.

Clark reasoned that the superiority claimed by the “strong” media theory advocates was due to “the uncontrolled aspect of the instructional method” such as the “programmed instruction” within the medium, and not the medium in and of itself (p. 91). Within the studies for the “strong” media theory, Clark found that there was “a lack of control of the informational content of the lessons presented” which confounded the validity of the research. Although he stated this frequently, he didn’t provide specific examples for the reader to concur and support his claims. A noteworthy point mentioned by Clark was that the variable of interactivity within the media can influence learning. Obviously, more interactivity will promote more learning.

Media does not affect learning. Media can contribute to learning through its design, content, context, interactivity, and learner motivation. Although the medium does not determine success in learning, it can definitely aid in stimulating learning. Clark’s compilation of articles in his book repeats this theory continuously throughout. It is obvious that he chose to publish a book that could have been condensed considerably. He claimed that space constraints prevented him from delving further into discussion on interesting areas that I would have gained from such as Dual Coding Theory (p. 98), and developments in the growth of cognitive theories of learning.
The “Weak” Media Theory (p. 80), but instead he chose to combine a group of related articles that basically repeat his assertion over and over again – that no learning benefits are gained from particular media employed in instruction, and that no single “medium makes unique contributions to learning and motivation” (p. 72). Any significant difference is due to the instructional method, the difference of content provided, or the novelty of the media which weakens once “new” media becomes “old”.

In spite of his repetitiveness, Clark presented worthy recommendations for future research such as:

- how “examples and analogies provide metacognitive connections” or vertical (rule-example) and horizontal (analogy) connections in the transfer of information (p. 120)
- the effects of different instructional methods on students” (p. 99),
- the “values for learning from one or another medium” and “values in current cognitive theories of learning” and motivation (p. 82)
- studies associated with “symbol system theories” in cognitive science domains such as “artificial intelligence, information processing, attribution theory, dual coding, and imagery, and studies of the antecedents of various kinds of transfer of learning and training” (p. 63)
- media attributes and their effect on learning and performance (p. 59)
- “the relative efficiency and cost of CBI versus traditional instruction” (p. 29)

Of the future research recommended by Clark, I find the cognitive theories of learning and motivation intriguing. Especially interesting is the Inverted U hypothesis that studies the relationship between arousal and performance. Maximum performance is hypothesized as
occurring when emotional arousal is moderate rather than under/over stimulated. It would be interesting to research this theory further and identify its flaws since I disagree with the theory.

Within the theory of motivation, the study of *if, how, and why* computerized games promote motivation in learning is an area that also interests me. Intrinsic motivation contributes to making the experience meaningful, memorable, and valuable; it provokes thought, modifies behavior, and promotes increased self-awareness and increased learning. Accordingly, the use of computer games promotes interactivity; there is a clear relationship between computer games, interactivity, and student motivation which is worthy of further investigation.

Clark’s theory has contributed to my viewpoint on the issue. I agree with Clark’s theory, it is not the vehicle that will promote learning, what’s in the vehicle will influence learning. As we submit these discussions on WebCT, it is not WebCT that determines our success in learning, nor is it the computer I sit at as I compose my thoughts, but rather the interactivity between us and the teacher, the quality of the content, the application of context, and the motivation that it produces within us. Media is a powerful tool in educating, yet the medium per se does not determine learning accomplishment. Although his work was published over 10 years ago, many of Clark’s observations and implications of theory still hold true today; and his recommendations for further research are worthy of investigation.
References


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