

Zhang, S., & Duke, N. (2008). Strategies for Internet Reading with Different Reading Purposes: A Descriptive Study of Twelve Good Internet Readers. *Journal of Literacy Research, 40*(1), 128-162. doi: 10.1080/10862960802070491.

### **A. Theoretical Perspective**

#### **1. Critique the author's conceptual framework.**

In Zhang and Duke's article, "Strategies for Internet Reading with Different Reading Purposes: A Descriptive Study of Twelve Good Internet Readers," the authors begin with the daunting task of positioning the purpose for this particular reading study within the larger conceptual framework of literacy studies, and in particular, the study of how people read. The authors begin by defining what it is they mean by "reading," by refining the description of the act of consuming text, and, in particular, what it means to move that definition into the world of online reading. The authors note that there remains a great many questions about the nature of web literacy, but that just as research focused on highly proficient readers of printed-text has led to a better understanding of literacy, so can research focused on highly proficient web readers. In the whole of research on highly proficient readers, a recurring finding is "that good readers are highly active and strategic when reading (p. 130.)" The authors go on to note the additional findings of this prior research, including detailing the attributions of good readers and contrasting that with findings about the attributions of poor readers, who generally maintain a passive approach and an uncritical stance toward the text. It is necessary for the authors to anchor their study in this theoretical position: if prior inferences and methodologies have been drawn from good readers of print-texts, then it is more readily accepted that this type of work might be replicated in online textual formats. Indeed, the authors then draw other connections between research that has been conducted on print-based texts that have been likened to the the experience of reading online, and cite studies that have compared utilizing indexes and hypertext, as well as the role of prior knowledge in reading for both milieus. Recognizing these similarities, the authors continue to develop their framework to focus on the divergence in reading strategies that have been identified between online and print-based reading. This divergence has been noted historically in previous research studies, and serves as another basis for the authors' current study: if Internet and print-based reading were identical, than the need for a study looking

specifically at Internet reading would be moot. Developing this argument even further, the authors note that while these studies identify the increasing complexity of Internet reading and the need for readers to develop strategies to meet this complexity, the idea of reading for purpose on the Internet has never been explicitly explored, despite the widely accepted findings that good reading and reading for a purpose are tightly intertwined. The authors move from surveying the historical research landscape in the areas of both print and Internet reading to defining explicitly what it is they mean when they discuss reading, grounding the definition in the new literacies framework: reading is more than decoding to comprehend, but rather encompasses a whole range of complex processes. By orienting the theoretical framework in the new literacies framework, the authors are arguing that Internet reading requires more than being a good print reader, but that a good Internet reader will employ a range of print-based skills in addition to new skills developed just for the mode of the Internet texts they encounter. Additionally, these skills will be informed by the reader's purpose for the Internet reading, an area of research that has so far not been explored. Given the wide range of theories and research in which the authors ground their study, the authors have developed a strong argument for this specific study and outline the logical progression from widely accepted research on print-based reading, to reading in response to hypertextual environments, to the demands of Internet texts. They note the questions that remain unanswered in the prior studies, and develop a strong argument that this current study is a logical next step in the search for answers around the nature of Internet reading.

## **2. Comment on the need for this study and its importance.**

Repeatedly throughout the survey of prior research completed in this area, the authors discuss the unanswered questions that remain in the face of the previous findings. The fact that no prior research has ever explored the influence of purpose on reading on the Internet creates a strong argument for the need for this study. It also speaks to the importance of the study: indeed, previous research on Internet reading has rarely or inefficiently explored how readers navigate the "open Internet." Just as it is a rare occurrence that a person might pick up a piece of printed text without a purpose in mind, from reading for information to reading for entertainment, so too is it rare that a reader might navigate different search engines and web pages without a purpose in mind. The authors state that the research developed in this

study is intended to inform methodologies for Internet reading, and given that purpose has never been explicitly explored, the importance of the study becomes even greater. A methodology for Internet reading could never be adopted with confidence without understanding the role of purpose. The authors also begin their paper by noting the pressing need for these types of reading skills as a crucial component of success in both education and the workplace. Given the need to develop these crucial skills combined with the lack of understanding of what these skills look like and how they are informed by a given purpose, the authors make a strong argument for both the need and importance of a study which explores both reading strategies employed and the way purpose influences the employment of those strategies. That being said, while the need and importance for the first research question, “How do good Internet readers read the Internet given different reading purposes?”, is well-articulated, I do not believe that the case for the second question’s need and importance was made. The authors themselves cite previous research that elucidate the link between reading strategies and reading purpose. It is widely understood by most K12 teachers that reading purposes inform reading strategies for all types of readers: this is a fundamental understanding and the cornerstone of most literacy programs. It would seem that the authors are served well by the first question on its own, and that the second question, while it is related to the first, seems extraneous and unnecessary.

### **3. How effectively does the author tie the study to relevant theory and prior research?**

The authors cite extensively the previous research done in the areas of reading, literacies, and new literacies, focusing on the ways that research highlighting proficient readers, reading for a purpose, and reading online informs their current research. All of these citations situate the authors’ research within relevant theory; however, it was surprising that they had not also included recent meta-analyses, notably the *Reading Next* report, which highlights the methodologies for reading that have had the most impact on adolescent literacy. This oversight may have been intentional given the study’s sample of proficient adult readers, however, it seems that their stated purpose to inform methodology would have necessitated citing at minimum a meta-analysis of that sort which focuses specifically on reading methodologies and their impact on readers.

Additionally, considering the inclusion of search strategies as a reading strategy later in the analysis

section of the paper, I believe the researchers should have expanded their discussion of new literacies in order to include search as a reading strategy. To only briefly identify new literacies theory does not offer enough of a theoretical grounding for the discussion that will come later. That being said, overall, Zhang and Duke have done an admirable job of citing research from various realms of literacy and new literacies, and have tied the research questions to the relevant theory and valid prior research.

#### **4. Evaluate the clarity and appropriateness of the research questions or hypotheses.**

The clarity of the research questions is not in doubt: both questions are concisely worded, logically flow from the prior discussion, and clearly articulate the point of inquiry for the study. However, in terms of the second research question, it remains unclear to me why the authors chose to expand the focus from the impact of purposes on reading strategies in good readers for Internet reading to the more broad question of the interplay between strategy and purpose in readers. While it is right and appropriate given the lack of research into Internet reading to focus specifically on purpose and strategy in that mode and to use good readers as way to codify those strategies, I do not follow the logic to expand the question to all readers, in all situations, using all strategies, for all purposes. To broaden the question to that extent renders it functionally unanswerable by one study, and considering the wide range of previous studies which do, in fact, examine readers in this way, it may have been overextending the study to include this question. While this inquiry certainly informs the broader question, it can not answer it in a conclusive or satisfactory way. To summarize, I find that the first research questions is clear and appropriate, while the second question is overly broad and only minimally informed by the theoretical framework and the first research question.

### **B. Research Design and Analysis**

#### **1. Critique the appropriateness and adequacy of the study's design in relation to the research questions or hypotheses.**

The study's design was qualitative in nature and centered on the identification of good readers, the assignment of a task to these readers, a simulated recall by the readers of how they read, and the subsequent analysis of the strategies employed by the readers. Qualitative designs of this type, in which a sample of proficient readers' strategies are codified and analyzed, have been conducted with print-based reading in order to develop effective methodologies in the past, and it would seem right and appropriate

to draw on that research model in order to expand the inquiry to Internet reading. Additionally, the authors discussed the use of a pilot to test the study's design and the adjustments to the design that were made from the pilot's results. In this way, the authors were able to refine the design of the research study in order to better study the processes of the readers. This type of study is appropriate for addressing the research question centered on good Internet readers, and tangentially addresses the second research question. By providing specific reading purposes to good readers, the researchers can then observe the strategies employed as reported by the readers in their simulated recall.

This is an adequate method for producing research results which address the first of the research questions. However, it is not adequate to address the entirety of the second question, while it may add some new understanding to that overarching point of inquiry. In order to best address the second question, it would seem that the authors may have included various levels of readers at minimum, and perhaps also expanded the task to include additional reading purposes.

**2. Critique the adequacy of the study's sampling methods (e.g., choice of participants) and their implications for generalizability.**

In discussions of generalizability in qualitative research studies, it has been noted that procedures, typologies, and sampling methodologies do not necessarily ensure valid conclusions about internal or external generalizability (Maxwell, 1992). Maxwell defines internal generalizability as "within the community, group, or institution studied to persons, events, and settings that were not directly observed" and external generalizability as "generalizing to other communities, groups, or institutions (p.293)." Generalizability is, of course, linked also to the chosen sampling method. In this particular study, the authors have employed an acceptable qualitative purposive sampling scheme, the critical case sample (Patton, 2002). In this sampling scheme, a sample of the population is chosen for its ability to provide the most information about a phenomena in which the researchers are interested. The critical case sample is often an "information rich exemplar(p. 237)," from which conclusions about the general population can be drawn. This type of sampling has implications for generalizability, in that if the information gathered from the critical case is valid, then it can be assumed that it would occur for the larger population at large. In this case, it can be argued that good readers under these circumstances would likely employ

the same strategies under the same conditions, allowing for, at minimum, internal generalizability (as defined by Maxwell). Additionally, because of the nature of the critical case sample, the study has some implications for external generalizability, notably that readers in the larger population could be said to employ some of these same strategies. The use of the critical case sample also allows for the researchers to maintain or expand the sample, as they have done, to adjust for the types of strategies employed by the readers. The authors indicated that a sample of twelve good readers were initially chosen, but that they had allowed for more readers to be added in the case of new reading strategies. This did not occur as the researchers found no new strategies were identified after the 9th reader, thus speaking to generalizability in that it is unlikely that good readers from the larger population would employ any additional strategies than were found within this sample. However, the fact that the sample did not have a gender balance, skewing heavily towards male, has implications for external generalizability. For example, previous research, including years of standardized test scores, tells us that females tend to be better readers than males. Because females are not equally represented here, I believe the authors will have problems making the case for external generalizability. Additionally, the choice of the critical case sample also excludes external generalizability to the strategies of all readers, which will prove problematic as the authors attempt to answer their second research questions.

**3. Critique the adequacy of the study's procedures and materials (e.g., interventions, interview protocols, data collection procedures).**

For this type of research design, the study's procedures and materials were adequate for conducting inquiry into the research questions. The study's procedures centered on the assignment of good readers to complete particular tasks. The authors recruited good readers as defined by their verbal skills as measured by standardized test scores, the time the readers used the Internet beyond email (beyond 15 hours), advanced navigation skills (as reported by the readers), and that their employment status reflected an advanced knowledge of how the Internet works. Once the readers were identified, the readers set about to engage with the different task designs. Finally, the readers engaged in a simulated recall protocol with a trained interviewer in order to fully elucidate the meta-cognitive aspects of their reading. The data collection procedures sought to capture the strategies which the readers employed as they read for

different purposes as designated by the assigned three tasks. The data collection procedures were sound and triangulated the accumulation of the data. First by screen-capturing the movements of the readers through different web spaces as they navigated the assigned tasks, second, through the simulated recall with the trained interviewer, and, third, through the video-taping of the simulated recall interview. It was also noted that the video-taped simulated recall interviews were transcribed as an additional resource for the later data analysis. By utilizing both screen-capture and the simulated recall, as well as designing tasks which required the readers to read for three different purposes, the researchers were able to collect data that can be analyzed to answer their research questions.

**4. Critique the appropriateness and quality (e.g., reliability, validity) of the measures used.**

In order to reliably tie the strategies employed by the readers to the purpose set for reading, the directed tasks needed to clearly and adequately force the readers to read for very distinct purposes. In my opinion, the use of a specific question, a general knowledge question, and an entertainment task effectively allowed for reading for very distinct purposes. In this way, the researchers can reliably conclude that the tasks encouraged this purposeful reading.

The researchers in this study relied in large part upon a simulated recall protocol to have the good readers identify the strategies which they employed to meet the requirements of the task. In this protocol, trained interviewers viewed the screen-capture of the task with the readers and asked them to narrate what they had been doing. The interviewer gave only non-directive prompts that were intended only to clarify the reader's answers. When the readers spoke at length about the strategies employed, the researcher paused the video to allow more time. The use of this type of verbal protocol has been utilized in other research studies, which gives confidence in the quality, appropriateness, and reliability of the protocol. In addition to the utilization of the simulated recall protocol, the researchers utilized a coding scheme which is also grounded in previous research, again lending confidence in the reliability of the coding scheme to produce a reading strategy inventory. The reading strategy inventory was developed through a multi-step process and then verified by an outside reader, who was an expert in both verbal protocol analysis and comprehension strategies. The use of the outside reader also gives confidence that not only the data collection, but the data analysis protocol is reliable.

Finally, given that the data collection protocol and the coding protocol were reliable, the use of two independent coders to identify strategies within the data gives credence to the reliability of the identification of the strategies. The researchers indicated that the inter-rater reliability of the two coders was 91%, which is a very strong rate of agreement. This can allow the researchers to conclude that the identification of the strategies employed by the readers was of high quality and appropriate.

Returning to Maxwell's discussion of validity in qualitative research, I thought it might be useful to employ two of his definitions of qualitative validity here in order to draw conclusions about the validity of the measures utilized. In light of the type of the research questions, it occurs to me that the most useful dissection of validity in this case lie with the ideas of descriptive and interpretive validity.

As is discussed above, the employment of reliable protocols in both the simulated recall and the coding scheme also allows for descriptive validity. Because of the reliability of these measures, it can be reasonably concluded that the strategies of the readers are described by the researchers accurately. The use of transcripts and videotapes also lends confidence to the conclusion that the study is descriptively valid.

The second aspect of qualitative validity to consider here is interpretive validity: that the conclusions drawn about the participants' perspective on the strategies are valid. The employment of the coding scheme that was independently verified, along with the high rate of agreement between the two independent coders, allow for the researchers to conclude that they've achieved interpretative validity.

Overall, it is my opinion that the researchers have employed measures which are both qualitatively valid and reliable.

**5. Critique the adequacy of the study's data analyses. For example: Have important statistical assumptions been met? Are the analyses appropriate for the study's design? Are the analyses appropriate for the data collected?**

Because this is a qualitative research study, there are no statistical assumptions to meet. The data analysis instead focused on employment of the coding scheme based on the inventory of reading strategies, the use of independent coders, and explicating the frequency that each strategy was employed. All of these analyses are consistent with the research question and are generally appropriate for the data

collected.

The use of the coding scheme to analyze the strategies employed by the readers is appropriate on its face. Of course, the issue with any coding scheme, no matter how many independent coders one calls upon, is that the categories chosen must be grounded in the prevailing theories and understandings about the phenomena at hand. In this case, the researchers began by grounding their research in the understandings provided by the world of comprehension studies. While they briefly mentioned that their definition of comprehension moved beyond traditional literacy studies and drew upon understandings of new literacies, it remains unclear how those two theories inform one another in terms of the coding scheme employed here. Specifically, the inclusion of effective search strategies as a reading strategy here is of concern for me. The analysis notes the frequency and variety of strategies employed by the readers, conclusions predicated on the coding categories including search as a reading strategy. This becomes even more questionable as search engines are further refining their algorithms, making search more and more responsive, and almost frighteningly psychic. Google Suggest, for example, begins suggesting at the very first letter typed into the search bar, and now even considers one's IP address in order to further refine the results based on one's location. There are now limited needs for the search strategies outlined here to be employed by either proficient Internet users or novices, independent of their reading ability. While noting that the Internet evolves at a rapid pace, sometimes rendering certain research into its utilities moot very quickly, I still find the inclusion of search puzzling as a reading strategy here. This speaks more to good Internet *users* rather than good Internet *readers*. Perhaps with better grounding within new literacy theory or with consideration of the way search algorithms are employed this would be a more valid analysis, but as it stands I very much call it into question.

### **C. Interpretation and Implications of Results**

#### **1. Critique the author's discussion of the methodological and/or conceptual limitations of the results.**

In large part, the authors' discussion of the the limitations of the results considered the majority of the shortcomings I had noted. The authors are forthcoming in noting that the use of a simulated recall protocol necessitates the loss of some of the thought-processes employed by the readers: it is virtually impossible to capture every thought within the readers' minds given the complexity of reading itself

compounded by the complexity of reading on the Internet.

The authors are candid about the limitations created by the lack of female participation in the study. When a sample elides over half of the population of readers, conclusions about the population are then limited in their validity. The authors also note that gender differences have been found in adult readers of print-text and it could be reasonably considered that there might also be gender differences in adult readers of the Internet.

I also agree that one of the greatest limitations of this study were in its implications for practice. The authors noted that while this study did a good job of identifying the strategies employed by good readers of the Internet, the leap to calling these strategies the *ideal* strategies to be employed when reading for different purposes on the Internet can not validly be made. Additionally, teaching low readers to be proficient by having them model the strategies of more proficient readers is an effective practice. However, I question that this would work in terms of reading on the Internet considering the complexity of the reading task in some of these sites.

In my view, the only limitation that the authors did not address was that of the inclusion of search strategies as a reading strategy. If search strategies were eliminated from the list of reading strategies, different conclusions would be drawn in terms of the complexity of the reading strategies employed, as well as in terms of the practice of teaching students to read on the Internet.

## **2. How consistent and comprehensive are the author's conclusions with the reported results?**

The reported results focused largely on the novel strategies employed by the readers in the context of Internet reading that are not observed in the context of print-based reading. Considering the premises from which the authors were drawing their conclusions, they were both consistent and comprehensive with the reported results. Zhang and Duke state, "We found that readers in this study used more than 50 strategies while reading on the Internet for three different purposes (p. 154)." These strategies generally centered around search strategies, authoritativeness of the site, and critical evaluation strategies. For example, in the frequency table for "Reading Strategies Used for Acquiring General Knowledge: The Initial Reading Phase (p. 146)," six of the eight strategies identified are search strategies. If the most

important conclusion of the study is the diversity of reading strategies, and a good deal of those strategies are improperly determined to be reading strategies based on the stated theoretical framework, then the conclusions are not consistent in general. However, the authors have clearly concluded these findings based on a set of premises that include search as a reading strategy, and if one finds that premise sound, then the conclusions are both consistent and comprehensive with the study's results.

Additionally, the authors report, "Based on the findings of this study, the teaching of Internet reading should be differentiated by purpose(p.157)." The findings did see, to some extent, that the strategies employed by the readers differentiated by purpose. However, to some degree this was due interplay between search and reading specific sites: and if search is eliminated as a reading strategy, then the conclusion is more tenuous that purpose should drive instruction around Internet reading.

### **3. How well did the author relate the results to the study's theoretical base?**

Zhang and Duke's results were well-connected to the theoretical base of comprehension studies in both print-based and Internet-based reading contexts and were certainly positioned within the realm of new literacies theory. However, the explicitness of the connection to new literacies theory could have been made more clear, which would also address the weakness associated with including search as a reading strategy. In the discussion of the results, the authors repeatedly tie back into previous research findings grounded in both theoretical realms, and use this to highlight the various implications of their research results. In this way they advocate for differentiation of reading strategies by purpose, the use of the "open Internet" in understanding good reading, and the ways in which the results might inform practice and methodology around Internet reading.

### **4. In your view, what is the significance of the study, and what are its primary implications for theory, future research, and practice?**

The significance of this study lies in the research methodologies employed. It is important to study what good readers do in an authentic a context as possible. While I take issue with some of the reading strategy inventory developed here, I think that the methods in general contributed to the ways in which the field might engage in this type of inquiry. The primary implications for future research reside in the areas that were identified by the authors: it is imperative that we better understand the interplay between authentic purposes for reading on the Internet and the ideal strategies to employ for those

purposes. Additionally, the questions surrounding the decision-making when reading for entertainment purposes are incredibly interesting and have many implications for understanding the development of new literacies.

Initially, the authors set out to answer the question “Do readers use different reading strategies for different reading purposes?” In my view, this question was moving the conclusions into the realm of theory development. In terms of the study’s addition to theoretical understanding of reading and readers, I would describe it as being one brick in a partially constructed edifice. While research has been done in this area, and we have a general understanding of how strategy is informed by purpose, the advent of reading in digital environments has called into question those assumption as the milieu changes. This study began a conversation about how those understanding might be adjusted in the face of these new contexts.

#### References

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