Literature Review Chart, MEDT 8484, Carlene Bailey

#	Article & Citation	Topic, Author, Author's Background	Research Problem Statement	Research Methods	Types of Data and Data Sources	Data Collection Strategy or Instrument	Data Analysis Approach /Results
1	Harper, B. (2009). Increasing Student Engagement Through the Use of Technology-Enhanced Feedback. *Teaching Educational Psychology*, 3(3), 1-8.	This article examined two methods, digitized feedback and the Turning Point active response system, and the extent to which these technologies enhanced classroom interactivity and promoted student learning and motivation.	The author, Brian Harper sought to identify a successful method of providing feedback to undergraduate educational psychology students through an online course shelf as a medium to address some of the confounding influence of environmental factors that detract from the implementation of task-related feedback.	.For digitized oral feedback, participants were thirty seven sophomores enrolled in two sections of introductory educational psychology at Cleveland State University. For Turning Point Active Response System, Forty-six undergraduate students participated and twenty-two received the experimental treatment.	For the portion on digitized oral feedback, there was a treatment group of students who received digitized oral feedback and a control group who received traditional written feedback. For Turning Point Response System, verbal responses in both treatment and control group were tallied. Responses were summed and divided by the number of weeks in the semester to yield a mean response for each section.	Forty-six undergraduate students participated and twenty-two received the experimental treatment. Data suggests that students in the treatment group were more likely than those in the control group to maintain focus on learning over the course of the semester.	Results for the use of digitized oral feedback were students in both treatment group and control group adapted to the required procedures quickly and all students were able to access feedback and make adjustments based on instructor comments. Results of the Turning Point Active Response Systems suggested that students in the treatment condition were more likely than those in the control condition to maintain a focus on the learning with respect to the educational psychology subject matter over the course of the semester. Those using the Turning Point active response system reported higher levels of class enjoyment, and were more like to read carefully in preparation for class and participated at a higher rate than those using only Powerpoint.
2	Chmiliar, L., & Cheung, B. (2007). Assistive Technology Training for Teachers - Innovation and Accessibility Online. *Developmental Disabilities Bulletin*, 35(1 & 2), 18-28.	This article addressed the concern for teachers to be educated in the use of assistive technology tools in the classroom with students with special needs.	Because teachers face increasing demands to meet the needs of students with special needs in inclusive classrooms, there is a corresponding increase in the need for professional development opportunities for practicing teachers in areas that will assist them to become more knowledgeable in meeting those needs.	Method- Athabasca University developed on online distance course for teachers in assistive technology. Features included and AT tool lending library, a discussion forum, multimedia, and a digital reading room.	Data Type- no data was collected in this article. A course in assistive technology was designed and implemented.	Data collection strategy- none in this article	Results- data analysis- Huge advances in assistive technology have occurred over the last decade along with advances in computer-based technology. These advances have resulted in the increase in the repertoire of AT tools available to enhance participation of students with disabilities. The development of this course increased the opportunity for teachers to update their skills and knowledge in AT.
3	Roberts, J.,	This article	Problem Statement-	Method An extensive		Data collection	Results The conclusion drawn was that

	O'Sullivan, J., & Howard, J. (2005). The Roles of Emerging and Conventional Technologies in Serving Children and Adolescents with Special Needs in Rural and Northern Communities. *Journal of Distance Education*, 20(1), 84-103.	focuses on reviewing current examples of learning technologies used in special education that involve blends of classroom and distant approaches, or "purer" forms of ODL (open and distant learning).	The article The Roles of Emerging and Conventional Technologies in Serving Children and Adolescents with Special Needs in Rural and Northern Communities, by Judy Roberts, Julia O'Sullivan, and Joan Howard, focuses on reviewing current examples of learning technologies used in special education that involve blends of classroom and distant approaches, or "purer" forms of ODL (open and distant learning).	six month research process included literature and database searches, telephone and email interviews and meetings with stakeholders.	Data Type- Qualitative data as mentioned in methods	strategy- Literature and data-base searches, telephone and email interviews with researchers and practitioners in Canada and the United States and in-person telephone meetings with various stakeholders In the Centre of Excellence for Children and Adolescents with Special Needs.	information communication technologies play a critical role in offering success and education to children with special needs and all others involved in their education.
4	Schumaker, J., Deshler, D., Woodruff, S., Hock, M., Bulgren, J., & Lenz, B. (2006). Reading Strategy Interventions: Can Literacy Outcomes Be Enhanced for At-Risk Adolescents? *Teaching Exceptional Children*, 38(3), 64-68.	Discusses a cross-sectional study that involves hundreds of junior and senior high school students and states that reading achievement of at-risk students and students with high incidence disabilities plateaus around seventh grade.	This article discusses a cross-sectional study that involves hundreds of junior and senior high school students and states that reading achievement of at-risk students and students with high incidence disabilities plateaus around seventh grade.	Methods- Students who were entering ninth grade who earned reading comprehension score two or more grade levels below ninth grade participated in this study. Twenty-seven students in the experimental group participated in a one hour reading strategies class daily for one semester (12 to 15 students in each class). Twenty-seven students in the comparison group, who were matched with the students in the experimental group according to age, gender, and reading	Data type- Quantitative- pretest scores served as covariates and revealed the comprehension posttest scores were statistically different.	Collection Strategy-The Gates- MacGintie Reading Test was administered at the beginning and end of the school year to measure degree of improvement in comprehension scores for two groups of students.	Results- Because many students reach the secondary grades reading well below grade level, intensive intervention is needed in order for them to succeed in their secondary courses. Results indicate that struggling readers can result in significantly higher scores on standardized achievement tests. Additional research is needed in order to determine whether such coursed can indeed close the performance gap so that students are decoding and comprehending at grade level when they complete instruction.

				comprehension scores received traditional reading instruction.			
5	Marino, M. (2009). Understanding How Adolescents with Reading Difficulties Utilize Technology-Based Tools. *Exceptionality*, 17, 88-102.	Reporting findings from a study that examined how adolescent students with reading difficulties used cognitive tools that were embedded in a technology-based middle school curriculum containing features of the Universal Design for Learning (UDL).	Problem statement-The purpose of this article was to report findings from a study that examined how adolescent students with reading difficulties used cognitive tools that were embedded in a technology-based middle school curriculum containing features of the Universal Design for Learning (UDLThe research problem addressed by this article was to uncover a reasonable approach for improving our understanding of the types of tools that support students who struggle in the general education classroom and to focus on effective design and instruction principles using UDL as a theoretical framework.	Methods- Students from four middle schools in the northeast participated in a four-week technology based science curriculum. They ranged from sixth to eighth grade. Student groups were established on students' scores on the Degrees of Reading Power test.	Data Type-Quantitative- Four one-way ANOVA examining difference tools were used.	Data Collection Strategy- Pre and Post tests, solution forms, Degrees of Reading Power.	Results the validation of the UDL theoretical research is in its infancy. Low ability readers benefited more from tools that share cognitive load, such as interactive databases, than their proficient reading peers. Since the low-ability peers did not did not use any of the tools included in the technology based curriculum as frequently as their proficient peers, indicating that low ability readers require additional explicit instruction regarding use of technology-based tools.
6	Kim, A., Vaughn, S., Klingner, J., Woodruff, A., Reutebuch, C., & Kouzekanani, K. (2006). Improving the Reading Comprehension of Middle School Students With Disabilities	Investigates the effects of Computer-Assisted Collaborative Strategic Reading (CACSR) on the comprehension of middle school students with disabilities and the	Problem Statement-The purpose of this study was t investigate the effects of computer-assisted comprehension practice using a researcher-developed computer program called Computer-Assisted Collaborative	Methods-Two reading/language arts teachers and thirty four students with disabilities participated. Students in the intervention group received the CACSR intervention, which consisted of 50 minutes .instructional	Data Type-Qualitative and quantitative-	Data Collection Strategy quasi-experimental study, use of pretests, a series of univariate analyses of covariance; student interviews.	Results reve4aled a statistically significant difference between intervention and comparison groups" reading comprehension ability.

	Through Computer-Assisted Collaborative Strategic Reading. *Remedial & Special Education*, 27(4), 235-249.	perceptions of participating students and teachers regarding the efficacy of CACSR.	Strategic Reading (CACSR)	sessions twice per week over twelve weeks.			
7	Harris, J., Mishra, P., & Koehler, M. (2009). Teachers' Technological Pedagogical Content Knowledge and Learning Activity Types: Curriculum-based Technology Intergration Reframed. *Journal of Research on Technology in Education*, 41(4), 393-416.	Critical Components for Technology Integration: How do Instructors Make Decisions? Authors: Semiral Oncu, Indiana University, Omer Delialioglu, Middle East Technical University, and Catherine Brown, Indiana University	Problem statement- The purpose of this article was to examine how teachers decide what technologies to use I their classrooms and what they expect to gain from adopting technology.	Method- This project involved partnership between a university and a community school corporation. During the project, teachers used various tools and technologies in their classroom teachings. 15-to 25 mathematics professionals were chosen to participate in the project from 2001 to 2003	Data Type- This research was guided by a qualitative case study design. Mathematics teachers' decisions were examined through observations, meetings, interviews and analyses of collection of documents, and artifacts that were produced throughout the project.	Data Collection Strategy- Observations, interviews, and document reviews were collected over a period of three years.	Results- Empowering teachers to take control of their own decisions is a implication that can be drawn from findings in this study. Results are consistent with previous research. Findings also suggest that teachers' use of technology and their expectations of how it will be used in the classroom are important factors to consider when new technologies are adopted.
8	Oncu, S., Delialioglu, O., & Brown, C. (2008). Critical Components for Technology Integration: How do Instructors Make Decisions? *Journal of Computers in Mathematics and Science Teaching,* 27(1), 19-46.	This article explores ways in which teachers decide which technologies to use in their classrooms, and what their expectations are about the gains from using the chosen technology. Data collection consisted of interviews, document collection and observations.	These authors state that while there is more technology in classrooms, there is little evidence that these technologies are integrated into instruction.	The subjects consisted of fifteen to twenty five mathematics professionals who participated in the study from 2001 until 2003. Five criteria found to affect teachers were: 1) Accessibility and availability 2) Applicability 3) Influence of colleagues 4) Teachers' skills/knowledge 5) Students' skills/knowledge	The research was guided by a qualitative case study design, and results were grouped into two categories. First, how do teachers make their decisions when selecting technology to use in their classroom and second, what are teachers' expectations with regard to technology adoption.	Data collection consisted of interviews, document collection and observations.	Participants' expectations suggested that they believed technology could enhance the lessons they were teaching and improve student learning and understanding. It was also found that more experienced technology users expect that technology will make things easier for them and the less experienced technology users believe that technology in not convenient and requires more preparation time.

9	Bebell, D., O'Dwyer, L., Russell, M., & Hoffmann, T. (2010). Concerns, Considerations, and New Ideas for Data Collection and Research in Educational Technology Studies. *Journal of Research on Technology in Education,* 43(1), 29-52.	This article explored ways in which teachers decide which technologies to use in their classrooms, and what their expectations are about the gains from using the chosen technology	The purpose of this article is to raise awareness that will cause readers to use critical reflection on some of the details that are important to data collection and educational technology research.	Methodological challenges in educational technology were examined and new data collection approaches were highlighted using examples from literature that the own work of the authors.	This research uses a visual analog sliding scale as an example of a new approach to survey design and data collection that capitalizes on the technology resources increasingly available in schools. These researchers also include the potential for computer adaptive surveying and discuss the critical importance of aligning outcome measures with the technological innovation, concerns with computer versus paper based measures of achievement and the need to consider the hierarchical structure of educational data in the analysis of data for evaluating the impact of technology interventions.	Multiple measures were used that focused on specific ways that teachers use technology. The approach was first employed to demonstrating the complicated relationship between teachers' adoption and use of technology to support their teaching by J. Mathews in 1996 in a paper presented at the Annual Meeting of the National Rural Education Associatio	Results were analyzed using seven distinct scales that measure teacher technology use. Purposes for teacher use varied widely. Resulting survey data from this research had qualities of an interval measurement scale, where by equal differences in the numbers correspond to equal differences in the amounts the attributes measured. The 181 step scale offered a clearer and more tangible interpretation of teacher's technology use.
10	Ertmer, P. (2006). Teacher Pedagogical Beliefs: The Final Frontier in Our Quest for Technology Integration? *Educational Technology Research and*	The topic of this article presents an argument for the importance of further research into the conceptual overview of teacher pedagogical beliefs as providing a barrier	The research problem of this article is to examine the relationship between teachers' pedagogical beliefs and compare this to effective technology practices.	The researcher used data from many previous studies to prove her conclusions that the teachers' habits and practices often provided obstruction for the implementation of technology to enhance student learning	Survey of previous research. Literature review provided the data.	This article did not conduct research using separate data collection tools. The strategy was to prove her point by collecting opinions from a broad spectrum of previous	The conclusions of this paper point to the need for more research into this phenomenon. Even though separate data collection was not performed, the effort to draw a link between teachers' teaching techniques and their use of technology was both interesting and helpful for me as I explore effective technologies that are currently being used in the middle school special education classroom.

	Development, 53(4), 25-39.	to higher levels of technology utilization in the classroom.				research.	
11	Gillispie, L., Martin, F., & Parker, M. (2008). Effects of a 3-D Video Game on Middle School Student Achievement and Attitude in Mathematics. *The Electronic Journal of Mathematics and Technology*, 4(1), 68-80.	This article explored how 3-D video games affected attitudes and achievement in middle school mathematics.	This study's purpose was to determine whether a highly interactive 3-D video game called Dimensions M could positively influence middle school student achievement in mathematics and also influence attitude toward math	The participants were 34 students enrolled in Virtual Math, and 28 of them participated in this study. A wide range of backgrounds included 13 Caucasians, 9 African Americans, 4 Hispanics, 1 Native American and 1 multi-racial student. The study took place at a rural middle school in North Carolina	A t-test was conducted on data obtained from the achievement pre-test and post-test to analyze the impact of the game's first mission on student understanding of prime numbers, even and odd patterns, and perfect squares.	The open ended questions on what participants' favorite subjects and favorite video games were analyzed using frequency data. A series of t-tests were conducted on attitude survey data for groups of similar questions on mathematics and gaming. Alpha was set at .05 for all statistical tests.	The results of this study add evidence to the idea that video games such as Dimension M might be useful tools for the delivery of instruction. The highly immersive nature and exciting game play used are elements that are effective in engaging students and teaching them mathematical concepts. The overall design of this game may serve as a model for further development of games that address other curricular areas.
12	Kolikant, Y. (2009). Digital Students in a Book-Oriented School: Students' Perceptions of School and the Usability of Digital Technology in Schools. *Educational Technology & Society*, 12(2), 131-143.	This article explored students' perceptions of school and the usability of digital technology in schools. It investigated the impact of computers and the Internet on learning preferences of students.	Given the fact that children all over the world use computes and Internet, that their thinking is shaped. It is important and necessary for us as educators to understand how students perceive this relationship.	Based upon preliminary research, a three part survey was composed and filled out by three history classes. Three classes participated in the study- an eleventh grade class, second was twenty-nine eighth graders, and the third was a tenth grade class.	Qualitative- surveys use to collect data. The data collection strategy was surveys filled out by three different classes that do not use computers in schools, one in a high school that advocates beyond-information activities and two in information-focused public schools – a high school and a middle school.	Part A surveyed the average time on computers in hours per day, part B surveyed identification with two approaches to writing history papers, and part C surveyed students' most common objection.	The results show that the Internet enters school through the back door. It was evident that a significant number of students prefer using the Internet when given the choice. Ignoring this could bring about a culture clash. Schools should rethink how to encourage student to engage in a fertile intellectual partnership with the technology to enhance their learning
13	Looney, M. (2008). Using an Online Survey Tool to Enhance Teaching. *Measurement in Physical*	The topic of this article was the use of online survey tools to enhance learning.	This article illustrated how the use of an online survey tool could be used in an educational setting to accomplish two objectives: (a) to	The author used SurveyMOnkey.com to compile a series of questions and surveyed students.	Some quantitative data in regards to the amount of participation and qualitative data in regards to participants' feelings	SurveyMonkey.com was used to compile a short seven item survey.	The use of online survey tools can save the instructor time because it compiles summary results for both closed and open ended items. Using technology to gather anonymous student feedback also give instructors the opportunity to help students

	Education and Exercise Science, 1(12), 113-121.		expedite the process of receiving student feedback before mid-semester, and (b) to introduce students to some of the confidentiality issues related to online surveys.		toward online instruments.		become more astute about protecting their privacy before completing online surveys.
14	Judson, E. (2010). [Improving Technology Literacy: Does it Open Doors to Traditional Content?] *Educational Technology Research & Development, 1*(58), 271-284.	The topic this article explored was whether or not improving technology literacy opens doors to traditional content.	This study investigated whether an identifiable link existed between gains in technology literacy and achievement in reading, math and language arts.	Norm curve equivalent content score changes from TerraNova assessments were calculated for approximately 5000 student from fourth grade and fifth grade and 5000 student from seventh to eighth grade Changes were compared to relative gains from a pre-to-post assessment in technology literacy.	Technology literacy was measured with the TechLiteracy Assessments. The proficiency in content area was measured using the TerraNova assessment. Quantitative data was extrapolated from the test scores.	TLA-EL and TLA-MS raw score results were converted to scaled scores with possible scores ranging from 100 to 300 and proficiency set as 220 by Learning.com. A Pearson correlation analysis was conducted to determine the overall relationships between the changes in technology literacy and changes in traditional content areas.	Results provided evidence of such connections between technology literacy gains and language arts skills. Results also provide some support for the supposition that improved technology literacy and academic achievement are correlated in the area of language arts.
15	Lei, J. (2010). [Quantity Versus Quality: A New Approach to Examine the Relationship Between Technology Use and Student Outcomes.] *British Journal of*	This study investigated the relationship between technology use and student outcomes by examining both the quantity of technology use, how much time	The author argues that to examine the relationship between technology use and student outcome, the quality of technology use, how and what technology is used- is a more significant factor than the quantity of technology use- how	Participants were seventh and eighth grade students and teachers in a north-western middle school in the United States. There was a total enrollment of 237 students for the two grades. Student teacher ratio was 9:1	Based on the fact that interviews and surveys were used to collect data, research was qualitative.	Reliability checked for researcher – designed scales. The reliability of the student technology proficiency scale, learning habit scale and developmental	When only the quantity of technology was examined, no significant association was observed. However, when the quality of technology was examined by investigating the specific types of technology uses, as significant association was identified between technology use and all student outcomes. Furthermore, different types Of technology showed different influences on specific student

Educational Technology, 41(3), 455-472.	was spent on computers, and the quality of technology use, how technology was used.	much technology is used.	(school year 2003-2004) Data was collected through surveys and interviews. Student GPAs were collected from school records.		outcome scale was 0.77, 0.77 and 0.90 respectively.	outcomes. Gener4al technology uses were positively associated with student technology proficiency while subject-specific technology uses were negatively associated with student technology proficiency. Specific suggestions for integrating technology into schools and future research were provided.

Critique

Similarities

Articles 2, 3, 5, and 6 are very similar to each other as well at to my research topic in that they explore new technologies that can be effective in the education of middle school special education students. Article 2, (Chmiliar, L., & Cheung, B., 2007) focuses on uses of assistive technology to assist individuals with disabilities to deal with their unique learning challenges. Article 3, (Roberts, J., 2005) discusses the roles of emerging and conventional technologies in serving children and adolescents with special needs. Article 5, (Marino, M., 2009) addresses the understanding of how adolescents with reading difficulties utilize technology based tools. Finally article 6, (Kim, A., Vaughn, S., Klingner, J., Woodruff, A., Reutebuch, C., & Kouzekanani, K., 2006) has researched improving reading comprehension of middle school students with disabilities through computer assisted collaborative strategic reading. These articles helped me to better understand current trends in the use of technology for the specific audience of my research topic. I found the information helpful, as I created the teacher survey that will be used in my research.

Differences

Articles 4, 7, 8, and 9 represent articles that are different from the others and offer only tangential support for my research project. Article 4, (Schumaker, J., et.al, 2006) addresses reading strategy interventions and how to enhance literacy for at risk adolescents. This offers insights into the reading challenges of my target population however it does nothing to address the uses of technology. Article 7, (Harris, J., Mishra, P., & Koehler, M., 2009) focuses on the teachers and how they integrate technologies but fails to address the student learning. The different view point of this article helped me to understand that the teacher is key to the future implementation of technology in the classroom and they often have personal barriers to its implementation. Article 8, (Oncu, S., Delialioglu, O., & Brown, C., 2008) explores how teachers decide what technology to use in their classroom and what they expect to gain from adopting the technology. This is similar to article 7, yet it further probes the anticipated outcomes educators often have when incorporating new technology. I found this insightful, but not directly helpful in my research plan. Article 9, (Bebell, D., O'Dwyer, L., Russell, M., & Hoffmann, T., 2010) is an article devoted to different data collection approaches and is not focused on the students' uses of technology in the classroom.

The articles that are different from my research topic had value to my plans if only to open my eyes to some broader concerns related to the implementation of effective technologies in the classroom. Data collection and teacher attitudes are both helpful when trying to discover what works and what doesn't.

Strengths

Perhaps the best way to analyze the strength of my article collection would be to choose articles that could provide direct information that could be referenced to prove and support my arguments. Articles 1 and 11 have some insightful discussions that hit at the heart of my project. Article 1, (Harper, B., 2009) states "…increasingly, institutions are looking for alternative means to promote interactivity and student engagement." Student engagement lies at the heart of my research project. Articles that explore this need provide me with not only useful data but also inspiration and motivation.

Article 11, (Gillispie, L., Martin, F., & Parker, M., 2008) suggests that "…traditional classroom teachers are faced with the challenge of delivering instruction that completes with media rich and interactive experiences that the typical student is exposed to daily." Technology is all around us and if the teachers and the institutions are delinquent in its effective implementation then the modern student's attention is lost before instruction can even begin. Articles such as this open up discussions that motivate further research into this topic. I find this literature most compelling and supportive of my efforts.

Weak Areas

Of the 15 articles in my collection, only three would be voted out after careful review. Articles 4, 7 and 8 would be removed and replaced with more relevant research literature. Even though these articles have opened my eyes to a broader view of my project, little information could be culled that would support my efforts. They were chosen, because the abstract seemed to relate, yet upon further reading it was discovered that little information related to my topic was available. Refer to the "Differences" paragraph for specific explanations of these articles.

Take Aways

This has been an enjoyable process. In the future, I would like to conduct my literature research prior to fully establishing my research topic. Perhaps only a framework of a topic could be used to guide the research with the final problem statement being formulated after absorbing much related literature. So much was learned from reading these articles about directions that would work well for my research. In the final conclusion, my feeling is that research is more of a process that evolves than a mission with a clear accomplishment. Often in the past, I have read articles that seemed to conclude without any proven statements. This disturbed me. After working on this research, I better understand this lack of results and have a better grasp of the efforts that must be taken to come to solid and meaningful conclusions.