

Educational Technology Research and Development is the only scholarly journal in the field focusing entirely on research and development in educational www.nxgvision.com Research Section assigns highest priority in reviewing.

Behaviorism[edit] This theoretical framework was developed in the early 20th century based on animal learning experiments by Ivan Pavlov , Edward Thorndike , Edward C. Tolman , Clark L. Hull , and B. F. Skinner. Many psychologists used these results to develop theories of human learning, but modern educators generally see behaviorism as one aspect of a holistic synthesis. Teaching in behaviorism has been linked to training, emphasizing the animal learning experiments. Since behaviorism consists of the view of teaching people how to do something with rewards and punishments, it is related to training people. Skinner wrote extensively on improvements of teaching based on his functional analysis of verbal behavior [45] [46] and wrote "The Technology of Teaching", [47] [48] an attempt to dispel the myths underlying contemporary education as well as promote his system he called programmed instruction. Cognitivism[edit] Cognitive science underwent significant change in the 1950s and 1960s. While retaining the empirical framework of behaviorism , cognitive psychology theories look beyond behavior to explain brain-based learning by considering how human memory works to promote learning. The Cognitive concepts of working memory formerly known as short term memory and long term memory have been facilitated by research and technology from the field of Computer Science. Another major influence on the field of Cognitive Science is Noam Chomsky. Today researchers are concentrating on topics like cognitive load , information processing and media psychology. These theoretical perspectives influence instructional design. This form of constructivism has a primary focus on how learners construct their own meaning from new information, as they interact with reality and with other learners who bring different perspectives. Under this framework the role of the teacher becomes that of a facilitator, providing guidance so that learners can construct their own knowledge. Constructivist educators must make sure that the prior learning experiences are appropriate and related to the concepts being taught. Jonassen suggests "well-structured" learning environments are useful for novice learners and that "ill-structured" environments are only useful for more advanced learners. Educators utilizing a constructivist perspective may emphasize an active learning environment that may incorporate learner centered problem-based learning , project-based learning , and inquiry-based learning , ideally involving real-world scenarios, in which students are actively engaged in critical thinking activities. An illustrative discussion and example can be found in the deployment of constructivist cognitive learning in computer literacy, which involved programming as an instrument of learning. Instructional design The extent to which e-learning assists or replaces other learning and teaching approaches is variable, ranging on a continuum from none to fully online distance learning. Synchronous learning refers to the exchange of ideas and information with one or more participants during the same period. Examples are face-to-face discussion, online real-time live teacher instruction and feedback, Skype conversations, and chat rooms or virtual classrooms where everyone is online and working collaboratively at the same time. Since students are working collaboratively, synchronized learning helps students become more open minded because they have to actively listen and learn from their peers. At the professional educational level, training may include virtual operating rooms. Asynchronous learning is beneficial for students who have health problems or who have child care responsibilities. They have the opportunity to complete their work in a low stress environment and within a more flexible time frame. If they need to listen to a lecture a second time, or think about a question for a while, they may do so without fearing that they will hold back the rest of the class. Through online courses, students can earn their diplomas more quickly, or repeat failed courses without the embarrassment of being in a class with younger students. Students have access to an incredible variety of enrichment courses in online learning, and can participate in college courses, internships, sports, or work and still graduate with their class. Linear learning[edit] Computer-based training CBT refers to self-paced learning activities delivered on a computer or handheld device such as a tablet or smartphone. For this reason, CBT is often used to teach static processes, such as using software or completing mathematical equations. Computer-based training is conceptually similar to web-based training

WBT which are delivered via Internet using a web browser. Assessing learning in a CBT is often by assessments that can be easily scored by a computer such as multiple choice questions, drag-and-drop, radio button, simulation or other interactive means. Assessments are easily scored and recorded via online software, providing immediate end-user feedback and completion status. Users are often able to print completion records in the form of certificates. CBTs provide learning stimulus beyond traditional learning methodology from textbook, manual, or classroom-based instruction. CBTs can be a good alternative to printed learning materials since rich media, including videos or animations, can be embedded to enhance the learning. Help, CBTs pose some learning challenges. Typically, the creation of effective CBTs requires enormous resources. The software for developing CBTs is often more complex than a subject matter expert or teacher is able to use. The lack of human interaction can limit both the type of content that can be presented and the type of assessment that can be performed, and may need supplementation with online discussion or other interactive elements. Computer-supported collaborative learning Computer-supported collaborative learning CSCL uses instructional methods designed to encourage or require students to work together on learning tasks, allowing social learning. CSCL is similar in concept to the terminology, "e-learning 2. This collaborative learning differs from instruction in which the instructor is the principal source of knowledge and skills. The neologism "e-learning 1. Collaborative apps allow students and teachers to interact while studying. Apps are designed after games, which provide a fun way to revise. When the experience is enjoyable the students become more engaged. Games also usually come with a sense of progression, which can help keep students motivated and consistent while trying to improve. Known as "eTwinning", computer-supported collaborative learning CSCL allows learners in one school to communicate with learners in another that they would not get to know otherwise, [72] [73] enhancing educational outcomes [74] and cultural integration. Further, many researchers distinguish between collaborative and cooperative approaches to group learning. For example, Roschelle and Teasley argue that "cooperation is accomplished by the division of labour among participants, as an activity where each person is responsible for a portion of the problem solving", in contrast with collaboration that involves the "mutual engagement of participants in a coordinated effort to solve the problem together. Flipped classroom This is an instructional strategy in which computer-assisted teaching is integrated with classroom instruction. Students are given basic essential instruction, such as lectures, before class instead of during class. Instructional content is delivered outside of the classroom, often online. This frees up classroom time for teachers to more actively engage with learners. Combinations of these techniques include blogs , collaborative software , ePortfolios , and virtual classrooms. The current design of this type of applications includes the evaluation through tools of cognitive analysis that allow to identify which elements optimize the use of these platforms. Classroom microphones, often wireless, can enable learners and educators to interact more clearly. Video technology [80] has included VHS tapes and DVDs , as well as on-demand and synchronous methods with digital video via server or web-based options such as streamed video and webcams. Telecommuting can connect with speakers and other experts. Interactive digital video games are being used at K and higher education institutions. With recent developments in smartphone technology, the processing powers and storage capabilities of modern mobiles allow for advanced development and use of apps. Many app developers and education experts have been exploring smartphone and tablet apps as a medium for collaborative learning. Computers and tablets enable learners and educators to access websites as well as applications. Many mobile devices support m-learning. Mobile devices such as clickers and smartphones can be used for interactive audience response feedback. Social media in education Group webpages, blogs , wikis , and Twitter allow learners and educators to post thoughts, ideas, and comments on a website in an interactive learning environment. Social networking encourages collaboration and engagement [89] and can be a motivational tool for self-efficacy amongst students.

Chapter 2 : Educational technology - Wikipedia

Technology is everywhere in education: Public schools in the United States now provide at least one computer for every five students. They spend more than \$3 billion per year on digital content.

Samuel Helms As new educational technologies develop, researchers are pressed to keep up. Educational technology, also known as instructional design and technology, can cross into many different areas of education such as elementary, special, and educational psychology. You can gather research topics in educational technology from a wide variety of resources; the best is by reading existing research. Authors usually present ideas for future research in the conclusion of the article. Games and Simulations Using games and simulations in educational settings is one area needing more research. Many studies in the past focused on using games, and many educational institutes, military settings, and corporate settings uses games and simulations as part of their training. However, some areas need greater research, such as how the rules of the game affect learning. A mixed methods approach may be ideal for this topic since using qualitative and quantitative data collection and analysis techniques will give you a greater understanding of incidental learning. Also, when studying games and simulations, remember that it is not just computer games and simulations that are worthy of research; role-playing games, board games, and card games all offer unique opportunities for research. Each of these types of games are used in education to teach a variety of different subject areas. Self-efficacy, Motivation, and Performance Some recent research contests the long held tenet that greater self-efficacy leads to greater performance. Research by Vancouver and colleagues have found that higher levels of self-efficacy not coupled with higher goals lead to reduced performance. The theory holds that as self-efficacy increases without the individual striving to achieve more difficult goals, the person becomes over-confident and devotes less resources such as time and effort to achieving the goal, leading to poor performance. This relatively new idea in research regarding self-efficacy, goal orientation, and motivation would be a great topic for more research. Although this area of focus is sometimes left to researchers in educational psychology, educational technology can explore this area by examining how instructional design affects self-efficacy and motivation. Technology Best Practices It is difficult for research to keep up with the rapid advancement of technology. Educators, however, are always looking for ways to improve student learning in their classrooms, and new technologies often present intriguing tools to do so. Conducting empirical research on how a specific technology interactive white boards, student response systems, or social media for example affects learning would be welcome by researchers, teachers, and administrators alike. Research on this topic would likely be well received at teacher conferences. Educators are always looking for ways of using such technology to enhance learning. However, some confusion exists over the best way to use the Web 2. This topic could take you in several different directions. A case study of a school striving to use more Web 2. Examining student reactions to Web 2. Using Different Methods Sometimes it can be beneficial to follow up a study with a study looking at similar variables but using a different methodology. For example, quantitative studies in educational technology using random samples and statistical analysis techniques could be followed by a qualitative study like a case study. Looking at the same topic from a different methodological angle can help illuminate different aspects of the topic. The conclusions and analysis of one methodology can be validated by using the opposite methodology. Repeating an Older Study Sometimes it is valuable to repeat an older study to see if the same results can be realized, particularly with changes in technology. Often researchers benefit by changing the older study slightly, perhaps by using a different analysis technique. Perhaps the participants of an older study were 8th grade students. Would the same results be found using 12th grade students? You should have a sound, well-researched reason for repeating an older study, however.

Chapter 3 : Educational Technology Research Proposal Topics | Synonym

Educational technology refers not only to the hardware and software used in an educational setting but also to learning through use of technological resources. RAND's research into educational technology includes the study of distributed

learning and interactive multimedia instruction in the military, computers in schools, and the role of the Internet in educational settings.

Chapter 4 : Educational Technology and Mobile Learning

The Research Center for Educational Technology (RCET) was founded in to study the potential of technology to improve teaching and learning.

Chapter 5 : Educational Technology Journals (Peer Reviewed)

Between and , the Institute of Education Sciences (Institute) supported over projects focused on education technology through the National Center for Education Research (NCER) and the National Center for Special Education Research (NCSEER).

Chapter 6 : Research papers in educational technology

The NETP is the flagship educational technology policy document for the United States. The plan articulates a vision of equity, active use, and collaborative leadership to make everywhere, all-the-time learning possible.

Chapter 7 : Educational Technology | Center for Education Innovations

The Journal of Research on Technology in Education (JRTE) covers topics ranging from original research, project descriptions and evaluations, syntheses of literature and theoretical positions that relate to the field of educational technology in teaching and learning and inform P school-based practice.

Chapter 8 : Digital Education Transformation

The CEO Forum on Education and Technology was founded in the fall of to helpensure that America's schools effectively prepare all students to be contributing citizens and productive workers in the 21st Century.

Chapter 9 : Research paper about educational technology

The Education Technology is defined as an array of tools that might prove helpful in advancing student learning. Educational technology can be considered either as a design science or as a collection of different research interests addressing fundamental issues of learning, teaching and social organization.