

Learning Theorists Research Report

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Abstract

Technology integration in education is a topic widely discussed throughout the educational field. This paper reviews the theories Jerome Bruner, Robert Gagne, and Seymour Papert had in regards to education. The paper then goes on to describe their theories in relationship to technology. Although technology integration has proven to encourage student engagement and creativity, it is not fully integrated by educational professionals. However, through personal experiences and intensive study in regards to educational theorists, I have determined that technology integration, spiraled curriculum, learner exploration, and a detailed design process are all essential components for a beneficial digital age learning environment. This paper seeks to answer the question: Why should educators integrate technology into their classroom instruction? It is hoped that this paper will inform and persuade practitioners as to why it is essential that technology be utilized in every classroom.

Keywords: Bruner, Education, Gagne, Papert, Technology

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To understand the role of educational technology, it is best to begin with a solid understanding of the learning process and technology's relationship to it, (Lever-Duffy and McDonald, 2015). Robert Gagne, Seymour Bandura, and Jerome Bruner, were all influential theorists who have worked to help educators deepen their understanding of the learning process. Through the combination of each of their theories, I have identified the most important aspects of teaching and learning, and how technology fits within this framework.

Robert Gagne was an educational theorist who bridged the theories of behaviorism and cognitivism. Gagne is known for his Nine Steps of Instructional Design. Gagne cited nine important events that are necessary for effective learning and should guide a teacher's instructional design (Clark, 2010).

The first of the nine steps is to gain attention. Gaining attention is necessary to draw the student into the content being addressed. When students are engaged in a lesson they are more likely to learn the content. Second, an instructor should inform the learner of the objective. This piece is important as it gives students an idea of what they are going to learn. If a student did not know the objective of a lesson, they may focus on a minor aspect as opposed to the primary focus. The third of Gagne's nine steps is to stimulate recall of prior knowledge. By recalling what students already know, and connecting it to new knowledge students are able to make connections which helps to solidify meaning. The fourth step in this design is to present the material. Delivering material to students must be done systematically. Giving too much information at one time can cause confusion, not retention (Clark, 2010). Step five requires educators to provide guidance. Providing guidance means that the educator should model desired outcomes. Next, step six, is elicit performance. This means that learners complete the task

themselves. Letting students explore content is an essential component of learning. Step seven, is to Provide Feedback. Providing feedback is essential, and beneficial for both the student and the teacher. Providing feedback allows the educator to progress monitor and create a plan for further instruction. Providing feedback also allows the student to reflect on their strengths and areas for improvement. Next, step eight, assesses performance. This is a check for understanding, and allows the educator to determine if students have mastered the objective. Lastly, step nine, is enhance retention and transfer. This step requires students to be able to use their learned skill in real world situations.

Technology could and should be implemented into most, if not all of Gagne's Steps for Instructional Design. By doing so, educators can create systematic designs to address student needs and differentiate instruction.

The purpose of education is not to impart knowledge, but instead to facilitate a child's thinking and problem-solving skills which can then be transferred to a range of situations (Bruner, 1961). Jerome Bruner (quoted above), was another essential educational theorist. He is known for his constructivist theory pertaining to the learning process. Bruner believed that learning is an active process. During this process learners build new ideas or concepts based on their current/previous knowledge (Lever-Duffy and McDonald, 2015). In following this belief, Bruner believed that educators should encourage students to discover knowledge. He also states that instruction should be organized in a spiral manner so students continually build on what they have already learned.

Through the incorporation of technology, it has become easier to create a spiraled curriculum that allows educators to differentiate instruction that permits students to explore

content. EveryDay Mathematics, Being a Writer, and ImagineIt are all spiraled curriculums utilized within Horry County Schools.

An essential educational theorist is Seymour Papert. Papert was a mathematician and educational technologist. Papert is known for his belief that technology should help children experience knowledge and construct meanings. Papert's view of education can broadly be summed into one phrase. Technology, "provides the opportunity for teachers to teach in new ways and for students to learn in new ways", (Papert, 1984). If this was Papert's opinion on technologies available then, what do you think he would say today? I cannot for sure say what he would think, but I will share with you his thoughts from 1984.

Imagine (if you can) that we lived in a world without writing- and, of course, without pencils, pens, and books. Then one day, somebody invents writing and the pencil, and people say, "Wow, this would be great for education. Let's give these things to all the children and teach them to write". So then somebody else says, "Hey, wait a minute. You can't just do that. You can't just give every child a pencil. You'd better start by doing some rigorous experiments on a small scale. So we'll put one pencil in a classroom, and we'll see what happens. If great things happen, we'll put two pencils in a classroom, and if greater things happen, then we'll put more."

But this would be missing the whole point of the pencil- indeed, many points. Pencils are an extension of you and whatever you do. They are everywhere, and are deeply embedded in our culture. ... It's part of the glue that joins the child to the culture and the culture to the child. Later on, the pencil is used for increasingly diverse purposes...

As I see the computer, it will come to be used in that way...

Computers and similar technologies have already gone through this same scenario. They have been “tested” and integrated into classroom instruction. Technology has become an essential component of today’s culture, similarly to how the pencil was years ago. Twenty years ago, would an educator not use a pencil in a classroom? Of course they would use a pencil. So as an educator today, would you essentially take today’s pencil away, would you not use technology?

Teachers use technology tools not only to make their professional work easier, but more importantly, to make learning more effective (Lever-Duffy and McDonald, 2015). Technology reinforces learning, addresses diversity, fosters critical thinking, allows for creativity, promotes collaboration and communication, assesses competency, and provides a medium for easier differentiation. Technology integration, spiraled curriculum, learner exploration, and a detailed design process are all essential components for a beneficial digital age learning environment.

References

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