PROVIDING TECHNOLOGY SUPPORT FOR EDUCATORS USING MERRILL’S FIVE PRINCIPLES OF INSTRUCTION

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**SUMMARY**

The educational system is changing. At the forefront of these changes is the use of technology in the classroom. New technology is providing many new and exciting opportunities for both students and educators. The problem with these new teaching practices, however, is that many educators are unsure how to incorporate these new changes into their classroom. This paper outlines one solution to the problem of teachers feeling inadequate using these new technological advances. Helping educate these teachers will lead to greater success in classrooms and will provide ample new opportunities for today’s students.

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# **INTRODUCTION**

 Over the past several years, technology in schools has evolved. The use of new technology provides educators with a myriad of ways in which to present instructional materials. These new presentation methods have proved to be beneficial in classrooms. Teachers are seeing the positive impact these supplemental teaching tools are having on students through increased student motivation and self-esteem, technical skills, and the accomplishment of more complex tasks and collaboration with peers (Singh & Means, n. d.).

 Educators are being taught how to use this technology through professional development trainings. The problem, however, lies in how to put this new knowledge into practice. This white paper proposes a solution to the lack of knowledge in how to take advantage of the phenomenal technological and media sources available by educating teachers on both the selection of the materials and creating ways in which they can implement them in their classrooms.

# **BACKGROUND**

 As stated above, the use of technology in the classroom has many benefits. According to a study by IT Trade Association CompTIA, “around 75 percent of educators think technology has a positive impact in the education process” (Cox, 2009-2016). This study also showed that technology

* Makes learning more fun;
* Prepares students for the future;
* Improves retention rate;
* Helps students learn at their own pace; and
* Connects with students (Cox, 2009-2016).

By utilizing technology in their instructional practices, educators help increase learning by creating social communities that revolve around the learning tasks. They also “provide for ongoing assessment and feedback, and help students develop a deep understanding of the content (Richey, Klein, & Tracey, 2011, p. 98).

 Considering the facts listed above, the use of technology in the classroom enhances student learning and success. Educators, therefore, should be well equipped to utilize the resources they have access to. Far too many educators, however, have limited knowledge on how to actually implement the use of technology in their classrooms. “…the exclusive survey, conducted by the Education Week Research Center…found that teachers, on the whole, still face systemic challenges in adapting their instruction to new technologies in transformative ways” (Rebora, 2016). Not only do teachers feel inadequate using technology, some long-time educators feel they can no longer be in the field of education. “I hear too often from experienced, valued, long-time teachers that they believe the time has come for them to retire, that they just don’t get this new stuff” (Murray, 2009-2016).

# **SOLUTION**

 The idea that long-time educators feel they need to leave the field of education because they cannot keep up with the technological changes is outlandish. These seasoned educators should feel enlightened by these changes, instead of disheartened. It is my hope, then, that this paper can help lay out a few strategies on how to educate these teachers on how to use these new instructional practices in their classroom.

**CREATING THE VISION**

In his article, *First Principles of Instruction*, David Merrill (2002), outlines five principles of instruction. Figure 1 “provides a conceptual framework for stating and relating” (p. 44) these principles.

**FIGURE 1**

PROBLEM

INTEGRATION

ACTIVATION

APPLICATION

DEMONSTRATION

(Figure replicated from Figure 1, Merrill, 2002, p. 45).

The five principles shown above are typically used by educators to help instruct their students. This same method, however, can also be effective in helping educators learn to use the new technologies being presented to them. By applying the same techniques they use on their students, teachers can become more familiar with the changes happening in educational settings and be more prepared and able to integrate the new instructional practices into their own classroom teachings.

**SELLING THE VISION**

 The first principle of instruction, *Problem*, can be described as learning being “promoted when learners are engaged in solving real-world problems” (Merrill, 2002, p. 45). Looking back at the purpose of this paper, the problem being addressed is a lack of knowledge in how educators can take advantage of the technological and media sources available. Educators are taught about these new technologies available for classroom use, but are unsure how to incorporate these practices into their classroom.

 The next principle of instruction, *Application*, states that “Learning is promoted when relevant experience is activated” (Merrill, 2002, p. 46). Before addressing a solution to the stated problem, background knowledge should be revisited. Educators should help uncover any previous experiences they have had with these new technologies. Have they been taught the purpose of the new programs? What experiences have they had with the technology in question. What programs have they used that may be similar to these? By asking questions and reexamining what they already know, educators are able to build upon their existing knowledge base.

 Principle 3, *Demonstration*, happens when “…the instruction demonstrates what is to be learned rather than merely telling information about what is to be learned” (Merrill, 2002, p. 48). This principle is the key to illustrating to educators how useful the new technology and media programs can be. According to Merrill (2002), “Knowledge to be learned exists at two levels: (a) information and (b) portrayal…Instruction is far more effective when it also includes the portrayal level in that the information is demonstrated via specific situations or cases” (p. 48).

 During *Application*, the fourth principle of instruction, “Learning is promoted when learners are required to use their new knowledge or skill to solve problems” (Merrill, 2002, p. 49). This experience of stepping back and providing support for educators after a demonstration has been done is referred to as *scaffolding*. During this stage, teachers are provided with a safe environment to put what they have learned into practice.

 The fifth and final principle of instruction, *Integration,* is when learners are “…encouraged to integrate (transfer) the new knowledge or skill into their everyday life” (Merrill, 2002, p. 50). During this stage, educators “demonstrate their new knowledge” (p. 50), reflect on it, then create and explore new ways in which to utilize the new technology in their classrooms.

 Figure 2 gives a brief, detailed description of each of the five principles of instruction.

**FIGURE 2**

|  |  |
| --- | --- |
| **PRINCIPLE OF INSTRUCTION** | **DEFINITION** |
| Problem | * Educators need to learn how to utilize technology in their classrooms.
 |
| Activation | * Educators revisit past experiences with the technology being taught and similar programs.
 |
| Demonstration | * Information is demonstrated using specific situations.
 |
| Application | * Teachers practice what they have learned.
 |
| Integration | * Educators integrate, reflect, and create using the skills they have learned.
 |

**NOW WHAT?**

Merrill’s five principles of instruction provide a framework in which educators have a consistent, safe environment to learn and put into practice the new changes in technology. By educating teachers in this way, they will feel more confident in using the new technology, thereby reducing some of the stress these changes in education are causing.

# **CONCLUSION**

In conclusion, some educators feel threatened by the use of new technology and changes in today’s classroom. They have been taught *about* the new technology, but are unsure *how to incorporate* it into their classroom. Several long-time educators are feeling the need to retire because the educational system is changing so much and they feel they are being lost or left behind because of it. To reduce these feelings of inadequacy, I have proposed using David Merrill’s five principles of instruction to help these educators become more familiar with the changes and help them incorporate them into their classroom without the fear of having ineffective results. The hope, therefore, is that these educators will begin to see the value in the new technology and have a desire to change with it and begin to feel comfortable using it in their classrooms.

 **“There can be infinite uses of the computer and of new age technology, but if teachers themselves are not able to bring it into the classroom and make it work, then it fails.”**

**-Nancy Kassebaum**

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