‘Students Know What They Are Doing’: The Introduction of the Simulation to Classrooms in the United States

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Abstract
The scholarly consensus is that simulations were introduced to classrooms in the United States during the 1960s. However, a closer examination clearly establishes classroom simulation usage much earlier. The theories of Friedrich Frobel and John and Evelyn Dewey were becoming increasingly influential in schools. The use of war games for military training purposes and as parlor games was widespread. Some pioneering teachers experimented with the simulation method in the early decades of the twentieth century.

“The justification for the [simulation] method and the philosophy is a general recognition that the students know what they are doing.”

Bernard Markwell, history teacher
Francis W. Parker School

If we are to believe several modern accounts, teachers in the United States first used classroom simulations approximately fifty years ago. For example, Sarane S. Boocock and E. O. Schild wrote, “The design of simulation games for classroom use is essentially a phenomenon of the last decade” (1968, 15). They go on to assert:

> In a sense, even games with simulated environments are not new. War games, really a type of simulated game, have been in existence for centuries, and have been used by most governments for training and prediction purposes. However, it is only since World War II that simulations have found any extended use in the social sciences, and *their introduction into elementary and secondary schools is very recent* (italics mine). (1968, 24).

Likewise, Robert Maidment and Russell Bronstein claim simulations were introduced into elementary and secondary classrooms during the 1960’s (1973). This conclusion was also echoed by D. R. Cruickshank and Ross Tefler, who declared, “Schools pioneered the use of instructional simulations through the 1960s and 70’s” (1980, 77). Finally, Brent D. Ruben concluded, “[In] the late 1960’s … the idea of designing simulated environments for teaching and learning was novel to say the least” (1999, 498). As these examples suggest, the scholarly consensus is that classroom simulations are of recent advent—the last half century. However, a closer inspection of the historical record proves otherwise. Teachers were experimenting with the simulation method no later than the early part of the twentieth century.

This paper explores the lineage of classroom simulations by answering the following questions:

> What were the historical roots and theoretical underpinnings of the classroom simulation?
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> When were classroom simulations first introduced to classrooms in the United States?
>
> How did the pioneering teachers use simulations in their classrooms?

Simulation: Defined and Described

The essence of the term "simulation" has been distilled into the following definitions:

> "It is an activity in which participants interact within an artificially produced environment which recreates some aspect of social reality" (Maidment and Bronstein 1973, 9).
>
> "An untaught event in which sufficient information is provided to allow the participants to achieve reality of function in a simulated environment" (Jones 1987, 9).
>
> "A replica of a real world situation worth learning" (Lee 1994, 12).

As the previous definitions indicate, educational simulations allow individuals to be active participants in their own learning experience. John L. Taylor and Rex Walford contended that educational simulations possess three basic attributes:

> 1. Players take on roles which are representative of the real world, and then make decisions in response to their assessment of the setting in which they find themselves.
> 2. They experience simulated consequences which relate to their decisions and their general performances.
> 3. They "monitor" the results of their actions, and are brought to reflect upon the relationship between their own decisions and the resultant consequences (1972, 17).

The simulation method calls for individual participation in a simplified, representational environment with guidelines that establish parameters for this educational activity (Taylor and Walford 1972). As active participants, students soon realize decision-making has consequences. Unavoidably, some decision-making is faulty, but this is not an indictment of the simulation method. In fact, student error can be a simulation's greatest virtue. As Ken Jones, the author of a handbook on simulations, averred: "A basic reason for using simulations is that mistakes are both inevitable and desirable. It is experiential learning" (1987, 18). Experiential learning allows students to profit from the simulation experience by modifying subsequent behavior. A simulation's value is, in part, "the transfer of knowledge and experience to other situations in the future" (Jones 1987, 89).

Origin of The Simulation

Educational simulations are the more enlightened cousins of ancient war games. Sun Tzu, the military philosopher who wrote, *Art of War*, is credited with creating the first war game known as *Wei Hai* (encirclement) about five thousand years ago. Little is known about this original war game except that an abstract playing surface was used; players maneuvered their armies represented by colored stone; the object of the game was, as the name suggests, outflanking the army of your opponent (Maidment and Bronstein 1973).

At about the same time, similar strategy games emerged in other parts of the East Asia. In Japan, the game of *Go* bears a strong resemblance to its Chinese predecessor. In India, the four-sided board game of *Chaturanga* became popular among the nobility. The elaborate playing pieces were representations of "foot soldiers, chariots, elephants, and cavalry" (Perla 1990, 16). The maneuvering of these pieces was set by rules, but a roll of the dice decided the outcome of player moves. The modern game of chess likely evolved from *Chaturanga* (Perla 1990; Maidment and Bronstein 1973).

Even with its strategy, tactics, and clear objective, chess bears only a remote resemblance

to the demands of leading an army—even a seventeenth century army. In 1664, Christopher Wikhmann created *Koenigspiel* (King's Game) in the German town of Ulm (Perla 1990). The game was based on chess, but with a larger board with each player having thirty pieces. Koenigspiel and similar games became known as "war chess," and they were considered valuable training devices (Perla 1990, 17).

In 1797, a scholar and military author named Georg Venturini designed a new war game that evolved into the famous Kriegsspiel. Venturini published a sixty-page rulebook. He expanded the board to roughly 3,600 squares (each representing one square mile), and each square was colored to represent the actual terrain along the French and Belgium border. The game pieces not only represented the infantry and cavalry units, but also included supporting arms and equipment. Various pieces also symbolized bridges, fortifications, supply magazines, artillery, convoys of wagons, and even field bakeries. Piece movement was restricted to simulate the actual time needed for movements of men, animals, and supplies. Through the adaptations of Baron von Reisswitz and his son, versions of *Kriegsspiel* were adopted and used by the Prussian military for training purposes throughout the nineteenth century (Lee 1994; Perla 1990). The reaction of General von Muffling, the Prussian Chief of the General Staff, upon watching a demonstration of the game is reflective of its realism and popularity - "'This is not a game! This is training for war! I must recommend it to the whole army'" (quoted in Perla 1990, 26).

In 1879, German style war games were introduced to the United States. In that year, W. R. Livermore published *The American Kriegsspiel* (Perla 1990). The U. S. Army, like most of Europe and Japan, began using this technique for training purposes. War games were also popularized during the early part of the twentieth century. In 1913, H. G. Wells published *Little Wars*. This is credited as the first textbook on war-gaming for fun (Sandars 1975, 15).

Simulation's Theoretical Foundations

At the turn of the twentieth century, the works of Friedrich Frobel, John and Evelyn Dewey, Edgar James Swift, and John A. Keith provided the theoretical foundation for the introduction of simulations to America's classrooms. They wrote about learning by doing—often referred to as "child activity" as well as the value of play. Their ideas influenced teachers of the early 1900s who began to experiment with new instructional methods including simulations.

Froebel believed that the Spirit of God is most clearly manifested in the form of a child. Therefore, the child from birth, in conformity with his/her divine nature, should be given freedom to develop his/her powers. Prescriptive education resulted in training that will "annihilate, hinder, and destroy" the child (Froebel 1907, 9). This type of education prevented the divine from being exhibited in the life of children. Froebel wrote: "education in instruction and training, originally and in its first principles, should necessarily be passive, following (only guarding and protecting), not prescriptive, categorical, interfering" (1907, 7). The aim of all education and instruction must be in this direction. In order to evoke these qualities from a student, education must be adapted to the nature and needs of the pupil (Froebel 1907, 10, 12-14).

In *Schools of Tomorrow*, published in 1915, John and Evelyn Dewey described the innovations occurring in schools throughout the United States, and the theoretical foundation that supported these changes. The Deweys wrote that Froebel was one of the most influential modern educators shaping school practice (46). While the Deweys affirmed the value of child activity, their view of the origin of these actions contrasted with Froebel's belief that a child's actions were a manifestation of the "Spirit of God." The Deweys

saw child behavior through the lens of science. They wrote, "Modern psychology has pointed out the fact that the native instincts of a human being are his tools for learning" (1962, 210). A child's instincts were expressed through his/her body. A child's senses were means to learning. To stifle or restrict instincts, bodily activities, or the use of the senses was to resist the child's "natural method of learning" (J. Dewey and E. Dewey 1962, 210). The Deweys noted that schools that have recognized a child's natural method of learning are using physical activities as a means of cultivating a child's reasoning and judgment (1962, 215). In summary, they wrote:

> But in schools where the children are getting their knowledge through by doing things, it is presented to them through all their senses and carried over into acts … the muscles, sight, hearing, touch, and their own reasoning processes all combine to make the result part of the working equipment of the child. (1962, 215)

At the beginning of the twentieth century, there were several educators singing the praises of child activity. If John Dewey was the first tenor of "learning by doing," there were other voices in the chorus, not the least of whom was Edgar James Swift, who published his educational philosophy, *Learning by Doing*, in 1914. Swift also echoed the Deweys' psychological explanation but added an evolutionary bent. In a chapter entitled, "The Revolt from Monotony," Swift contended that instinctively children yearn for adventure, for activity, for play. Conventional educational wisdom attempted to stifle these impulses. Children's thoughts and interests were those that give them immediate pleasure. They do not possess the derived interests of adults for reputation, business standing, or money. Even adults reverted back to the interests of children when in moments of leisure. What else could explain the popularity of adventure books, recreation, and spectator sports? Camping, fishing, and hunting, which required individuals to surrender modern conveniences and endure the basest physical challenges, were evidence of humankind's true nature. Swift observed, "If men will go through such torture and call it fun there must be something deep down in their nature that makes it worth the game. And that 'something' seems to be the primitive instincts which civilization has been unable wholly to eradicate" (1914, 9).

John A. Keith was also a member of the "learning by doing" chorus. In an address before the Schoolmasters Club in 1907, Keith recognized that both social and psychological force affected learning (1907, 175). Keith held that the deepest law of human nature is that, "One becomes by being" (1907, 174). Keith believed that the mission of education is to condition children through various types of activities, so they may progressively become more socially efficient. Education must be viewed within a social context. Children are inherently interested in topics that have a social utility and a social significance. As children are able to build wider and deeper social relationships, they become more socially efficient. Furthermore, Keith asserted that school subjects were social products. Subjects were "aspects of a past and existing social life and have their values for education because of the increased social efficiency which their mastery confers" (1914, 175-176). This social construction had a bearing on the curriculum. Subject matter should be organized around social and psychological considerations rather than what was logical. In other words, the child should approach a subject or topic based on how it affects his/her relationship with others. Schools improved society through a social construction of knowledge, accompanied by activities, which progressed toward invention and discovery (1914, 175-176).

In addition to the importance of child activity, Froebel extolled the virtues of play. He believed play was the highest phase of development in early childhood. Play, at this stage is not trivial, but carries great significance. Parents are encouraged to cultivate playful activities for their child. The way a child plays reflects on his future behavior as an adult (Froebel 1907, 54-56). Froebel wrote, "The plays of childhood are the germinal leaves of all later life; for the whole man is developed and shown in these … tendencies" (1997, 55). Furthermore, he asserted that the purpose of play changed as children matured:

> For, while during the previous period of childhood the aim of play consisted simply in activity as such, its aim lies now in a definite, conscious purpose; it seeks representation as such, or the thing to be represented in the activity. This character is developed more and more in the free boyish games as the boys advance in age. This is observable even with all games of physical movement, with games of running, boxing, wrestling, with ball-games, racing, games of hunting, of war etc. (1907, 55)

Children enjoyed games because they fed their growth in power both individually and as a part of a group. Froebel believed that childhood play is the result of vital energy and buoyancy. Childhood play makes pupils "intelligent, and quick to learn, quick to see and to do, diligent and full of zeal, reliable in thought and feeling, efficient and vigorous" (1907, 111). It also contributes to the development of physical, intellectual, and moral power (1907, 112-114).

The Deweys also recognized, what Froebel had observed, that the quintessential activity of children is play. They believed play had an educational value noting that some schools made "organized games, toymaking, and … other construction based on play motives" an integral part of the curriculum (1962, 78-79). Children spend the greatest part of their time in play. Typically, they create their own play activities, which often involve imitation of the occupations of adults. Nearly all children will play house, doctor, or soldier. The Deweys concluded,

> The educational value of this play is obvious. It teaches the children about the world they live in. The more they play the more elaborate becomes their paraphernalia, the whole game being a fairly accurate picture of the daily life of their parents in its setting, clothed in the language and bearing of the children. Through their games they learn about the work and play of the grown-up world. Besides noticing the elements which make up this world, they find out a good deal about the actions and processes that are necessary to keep it going. (1962, 79)

Froebel, the Deweys, Swift and Keith provided the theoretical support for the classroom use of simulations. Their ideas found a receptive audience among some teachers who found traditional practices ineffective. Learning by doing, child activity, and play were concepts that could be readily incorporated into the simulation method. It is not surprising then that in this regard Boocock and Schild concluded: Dewey's general education philosophy contains most of the premises upon which the simulation games being designed . . . are built" (1968, 57).

Simulations Are Introduced to Classrooms in the United States

Anecdotally, there are many examples of simulations being used in classrooms during the first decade of the twentieth century. The Deweys indicated that schools all over the country were making use of the "child's instinct for play" (1962, 78). They cite numerous instances where children were learning by doing, some of which were simulated experiences. Swift noted several

examples of classroom simulation use, which he described as experiments. He lauded their implementation and noted that they grew out of the needs of students. Swift exclaimed, "They [experiments] have been actually tried in schools" (1914, 70). The purpose of these experiments is to practice the "pedagogical maxim, 'one learns by doing'" (1914, 98).

Handwork Simulations

Some simulations, often referred to as "handwork," were being tried in schools at the onset of the twentieth century. Handwork is defined as "construction based on play motives" (1962, 78-79). Handwork can be broadly construed as a simulation that combined child-directed play with an educationally productive activity. The evidence indicates that handwork was most commonly used at the elementary level (Richards 1900). C. B. Shaw, a fourth-grade teacher, decided to experiment with "self-organized group-work" after hearing a presentation made on this topic by Dr. Scott of the Boston Normal School. Shaw allowed students to choose a group project or activity that interested them (Wells 1900). The activities students selected included sewing, crocheting, drawing, arithmetic, playing house and store. Children were only allowed a half an hour each week to work on these activities. This modest time allotment points to the tentative nature of the experiment. In spite of this, the teacher observed students spending much extra time on their projects before and after school and during recess (Wells 1900).

> This experiment was continued the next school year. The groups for acting plays, stories, and poems attracted many students, but pupils also participated in a variety of other activities including cooking, sewing, and doll dressmaking. From the results of the two-year experiment, Shaw felt "encouraged to continue the group-work" (334).

The Deweys also described a number of schools that used handwork. The Elementary School of the University of Missouri, under the direction of Professor J. L. Meriam, allotted handwork for one quarter of the instructional day. Professor Meriam believed that schools of the past had ignored the needs of individual children. He believed that "the work and play of the school should be children's work and play; that the children should enjoy school" (quoted in Dewey and Dewey 1962, 32). The guiding question for the curriculum was: "What would these children naturally be doing if there were no school?" (quoted in Dewey and Dewey 1962, 32) Meriam held that children would be:

> Playing outdoors, exercising their bodies by running, jumping, throwing; they would be talking together in groups, discussing what they had seen or heard; they would be making things to use in their play, which might include boats, beanbags, dolls, hammocks, or dresses . . . Again, these occupations are all closely connected with the business of living, so we send our children to school to learn this. What, then, could be more natural than making the school's curriculum of such material? (quoted in J. Dewey and E. Dewey 1962, 32)

Consistent with this view, Professor Meriam divided the school day into four periods devoted to the following elements: play, stories, observation, and handwork.

The kindergarten at Columbia University found that they were most successful when the children's instinctive activities were linked with their social interests and experiences. A young child's social ties and experiences revolved around his/her home. The educators at Columbia believed that a child's intense interest in dolls was indicative of the importance a child placed in human relations. The doll thus served as the

starting point for the kindergarten's educational activities (J. Dewey and E. Dewey 1962).

Children had all sorts of things they wanted to do and make for their doll. The doll needed clothes, so students designed patterns with paper and scissors. Experimenting as needed, children received suggestions from the teacher. When the patterns were finished, the children chose and cut the cloth. Then, they learned to sew. The doll not only needed clothes, but also shelter so the children constructed a house from a great chest of big blocks found in the corner of the room. They used long flat boards for the walls and roof and square blocks for the foundations and window frames. When the house was completed, it was obviously in need of furniture, so students constructed tables, chairs, and beds from blocks of wood and thin boards. The doll needed dishes for its food, so this need served as a motivation to learn clay modeling. Student creations were not always useable, but the finished product was not the point. The children had been involved in problem solving, and they enjoyed the process. Children developed manual dexterity, and they knew the sense of accomplishment of working towards a definite end (Dewey and Dewey 1962).

The Francis W. Parker School in Chicago provides a final example of handwork. History education, at the time this school was founded in 1901, was described this way:

> History teaching . . . had been planned largely to give information in chronological sequence. Teachers carefully selected the amount of subject matter for a grade but gave little or no effort to the end that it be comprehended by the children. The test consisted in the quantity of learned facts that could be held in memory. (Stone 1976, 169)

Colonel Parker was a freeing influence upon the teaching of history at the Francis W. Parker School. Parker encouraged teachers to discover the interests of children at each age. Parker believed that history materials should consider a child's interests; thereby adding meaning to children's activities and giving social significance to the life around them. His attitude led to experimentation:

> Step by step, as new ideas came, Colonel Parker applied them, tested them, and rejected or accepted them, according to their appeal to, and effect upon, the children. For instance, Colonel Parker happened one day to see a group of young children making play-houses in the workshop, and he believed that they might be interested in the way in which people of other lands built their houses. He suggested that children be … allowed to reproduce in miniature the simple homes and belongings of interesting primitive people in different environments. (Stone 1976, 169)

If simulations are in part, a simplified reality, then, clearly, handwork was a simplified, simplified reality. In the examples cited above children were active participants. They were given decision-making responsibility for their handwork. Perhaps, the simulation attribute lacking was a consequence(s) for student decisions.

Classroom Organization and Management Simulations

At the turn of the 20th century, simulations were also used for classroom management and organization. An implicit goal of this simulation type was to teach democratic principles. In 1904, Lotta A. Clark, a history teacher in Charlestown, Massachusetts, decided to try an "experiment" with her ancient history high school classes (1907, 336). She had two objectives: "(1) [students were] to co-operate-to work together; and (2) to give each individual a chance to do the sort of thing which he *particularly wants* to do (italics in the

original)" (1907, 336-337).

With these objectives in mind, Clark turned over the classroom recitations to her students. A student chairman was appointed. A committee was formed to nominate candidates for the classroom president, vice-president, and secretary. These officers were elected by ballot for one month. Students faced a perplexing problem when they had to decide the teacher's role. This question was resolved when Clark was given the title "chief executive officer" (1907, 336-337).

The new recitation took on the following order:

1. The president called the class to order and took roll.
2. The secretary's report was corrected and then formally accepted.
3. The president called for any unfinished business.
4. The lesson of the day was called for.

With the call for the day's lesson, students volunteered to describe the day's assigned historical event. If an error was made in describing the event, any other student could secure the recognition of the president and make the necessary corrections. Any question that was not satisfactorily resolved was left for the next day's unfinished business. Students often researched these unresolved issues that evening and presented their findings the next day (Clark 1907).

Clark also found classroom discipline satisfactory using this method. An incident, where a boy was severely reprimanded by the teacher, was well documented by the class secretary. The whole incident, in minute detail, was presented in the secretary's report. The report was accepted by the class and placed on file. No further disciplinary incidents occurred in that class section (Clark 1907).

The most compelling example of organizing a classroom through simulation is the case of Miss Nellie Hammond, who taught American history and government and modern and current history at Woburn, Massachusetts. Towards the middle of the school year, she was disabled by a physical malady. The symptoms were such that she was forbidden to use her eyes—a condition from which she later recovered. Since hiring a substitute at midyear seemed unwise, Miss Hammond was allowed to formulate a plan, so she could continue to perform her duties in the classroom. She decided upon creating a "pupil-government" in the classroom (Swift 1914). For her senior class, a school committee of eight students already existed. The eight-committee members were given the responsibility of assigning lessons, topics, and readings. Students eagerly discussed the local issues facing the city of Woburn. The class had also set up the simulated school/city of Woburnia. A student portrayed the mayor of Woburnia and delivered an inaugural address to the entire school (Swift 1914).

Unlike the seniors, Miss Hammond's junior class lacked an existing governmental structure. The class decided to write a constitution. After establishing the constitution's preamble, that the government should increase the interest and efficiency of schoolwork, the constitution called for the establishment of several committees with various responsibilities. The committees included the Topic Committee, Library Committee, Far East Committee, Near East Committee, the Committee on European Affairs, the Committee on United States Affairs, and the Committee on Woburn Affairs (Swift 1914).

Content Related Simulations

There are a handful of documented instances of content area simulations being used at the beginning of the last century. These simulations provided an opportunity for students to put abstract concepts to practical use. They contain the basic attributes of a simulation as

previously delineated: participants take on roles representative of the real world; they make decisions; they experience consequences related to these decisions; they reflect on the decisions and the resulting consequences.

Lotta A. Clark, who in 1904 had used simulations heretofore for classroom organization and management purposes, decided the following year to use another simulation with her United States history and civil government classes. Clark held two mock state and city elections. Each class was divided into two wards, appointed officers, and every pupil registered as if s/he was a voter. Typed lists of registered voters were posted on the bulletin board, and ballots were prepared. On Election Day in Massachusetts, Clark's students got to vote like everyone else. In order to simulate the Australian ballot, children voted at their desks with desktops raised. Completed ballots were placed in sealed ballot boxes. The ward officers counted the votes, posted the results, and the election was declared (Clark 1907).

Another example of a content related simulation involved a fifth-grade teacher ingeniously establishing a post office. Students made the money and the stamps. They brought bundles to school to be mailed. Two boys took the part of postmen. They weighed the packages, consulted the map, looked up the postal rate, and gave change to the customers. The simulation required the students to make use of the weight and multiplication tables (Dewey and Dewey 1962).

Mason D. Gray, a teacher at East High School, in Rochester, New York, tried a highly involved experiment with his Latin students. Mason had considered and tried other methods to make the study of Latin more meaningful. He found that mere descriptions of everyday life in ancient Rome were not illuminating unless his students could join in the daily activities of Roman life. Mason desired a method that would be both "continuous and self-sustaining" (1906, 297). He wanted an activity that would provide background and coherence to his students' study of Latin. Mason decided upon simulating the political contests of the Roman Republic. This he hoped would garner student interest. The Roman State was organized, initially, by assigning each Latin section a trade guild (*collegia opificum*). The guilds, assigned by lot, included: garlic-dealers, grocers, carpenters, goldsmiths, porters, and dyers. Each trade guild selected from its members a president (*princeps*) with the remainder of the class section in the role of apprentices (*discentes*). The room in which students recited their lesson became their *Clitia* or place of assembly. Gradually, additional tasks were assigned to the guild including drawing-up of membership rules, the choice of a patron deity, and of a Roman *patronus* (Mason 1906). Mason concluded, "We have reproduced, as completely and accurately as a limited number of pupils would permit, the ancient Roman political organization" (1906, 296).

Each member of the trade guild was assigned a name by the president. The names were taken from notable military, political, and literary figures of the last century of the Roman Republic. Students were assigned these names randomly, and they retained the name for the entire school year. Students were expected to learn the life of the person whose name s/he had taken, as well as becoming acquainted with the names and deeds of those taken by their peers. Students were encouraged to use their Latin names in addressing one another (Mason 1906).

Once students had received their Latin names, they were then classified as citizens either by birth, naturalization, or by manumission. The students then successively enrolled in the four political units of *curia, tribus, classis,* and *centuria.* This was done on the basis, respectively, of birth, geography, wealth, and age. Property of a definite amount was assigned to each citizen within the limits of his/her class. Each pupil was assigned a

tribal name on a geographical basis. The student then incorporated, in his/her name, the name of the tribe. Students were also assigned an Italian town as a place of residence. Finally, once student has a thorough understanding of their political status, various political assemblies were organized and operated (Mason 1906).

D. C. Knowlton, a teacher at Barringer High School in Newark, New Jersey, sought an effective way to teach his students about the events and lessons of the Peloponnesian War. He realized that while the events were complex, they were also filled with drama and human interest. Knowlton also recognized that students could readily connect with the democratic institutions in ancient Greece. When he heard about innovations at other schools, he decided to conduct his own experiment (1910).

Knowlton implemented a simulation in his Greek history classes. Each class would be transformed into an Athenian Assembly during the time of the Peloponnesian War. Two or three students from each of his three Greek history classes were asked to research the Athenian Assembly. They determined the officers needed for the assembly and their exact duties. They were also asked to find the procedures that governed the assembly. These rules were modified to fit the constraints of the classroom and were as follows:

> (1) Solemn curse on traitors, pronounced by the herald
> (2) Declaration by the chairman (*epistateis*) that the gods are propitious
> (3) Reading of the day's resolutions by the herald
> (4) Inquiry by the chairman as to whether the assembly wishes to discuss the resolutions, or to put them immediately to a vote
> (5) Discussion of the measures
> (6) Voting on the measure
> (7) Adjournment
>
> (Knowlton 1910, 483-484)

After explaining the rules of parliamentary procedure, the simulation ensued. The assembly elected a presiding officer (*epistateis*). Students were also selected for the offices of herald and sergeant-at-arms. The assembly meeting was opened daily with the formula, "Cursed be anyone who betrays Athens by thought, word, or deed" (Knowlton 1910, 485). Each day students debated resolutions similar to those, which came before the original assembly. The following resolutions are representative:

> (1) that Athens is prepared for war
> (2) that the plan of Pericles for the conduct of the war should be supported by all Athenians
> (3) that the proper time to make peace with Sparta was after the blockade on Sphacteria
> (4) that the only hope for Athenian victory is in making an alliance with Persia
>
> (Knowlton 1910, 485)

Commenting on this experiment, Knowlton observed, "It is simply one of the many attempts which are constantly being made to stimulate that self-activity which is the real end and aim of all good teaching" (1910, 483). As a result of the simulation, Knowlton found, "At no other time throughout the course were so many books consulted and used so intelligently" (1910, 486). At the conclusion of the simulation, students were tested. They were asked to take and defend their position on some of the war resolutions. Their experience was so real students often wrote in the first person, as this pupil's response indicates:

> Athenian citizens, we ought to ally ourselves with Persia. There is nothing else left for us to do. You say perhaps that the fact that Alcibiades is the one who proposes this ought to condemn it. Even if Alcibiades is not a true patriot, he will never dare turn traitor to Athens again

> … We will have time to recover from our losses if Persia aids us. It will tide us over this defeat. An alliance with Persia does not necessarily mean subjection to Persia. We need money. Persia has offered us money. Why not accept? (quoted in Knowlton 1910, 487)

Conclusion

The literature of this period frequently employed the term "experiment" to describe the use of simulations. Of course, the word "experiment" is revealing. It suggests simulations were still a novelty in American classrooms; some teachers used this instructional method, but it was not yet widely practiced. The words of Lotta A. Clark are telling. She wrote of "experimenting" with group work at her high school (1907, 335-336). Her article opened with this statement: " A child, like everyone else, learns to *do* by *doing* (italics in the original)" (1907, 335). While Clark believed this statement was broadly recognized as a truism in her day, she claimed it was not widespread in its application.

Early simulation usage served a variety of functions. At the elementary level, it usually took the form of handwork. At the secondary level, simulations were used for classroom organization and management including democratizing the classroom. Other teachers sought a more effective means of teaching than the traditional fact-based instruction often referred to as recitation. They used content related simulations to engage students in the subject matter. Simulations transformed abstract topics into meaningful experience.

The simulations "The Roman State" and the "Athenian Assembly" provide persuasive evidence that the simulation method was introduced to American classrooms at the birth of the last century, if not before. Students were assigned roles that so closely approached reality that they continued in their role after the simulation had concluded. The complexity of these simulations is surprising. The Roman State involved the majority of students in a large metropolitan high school, while students in the Athenian Assembly researched this political body before it was organized. Student decisions had consequence. Both simulations replicated ancient democratic institutions with the power to make decisions for the welfare of their peoples. The Athenian Assembly made decisions that would determine the fate of the city-state. These two examples and others that have been previously cited meet the modern criteria for a simulation.

Undeniably, simulations have a lengthier and richer history than previously believed. Given the evidence, it should not surprise that simulations were introduced to students in U.S. classrooms at the dawn of the twentieth century. The voices of Froebel, the Deweys, Swift, and Keith appealed to teachers disenchanted with antiquated teaching methods. Some educators realized children needed more developmentally sound educational methods and practices. The concepts of learning by doing, child activity, and play could readily be incorporated into a simulation. This method, as seen in war games, was being popularized through parlor games. These various historical forces converged to bridge the chasm between experiential theory and the practice of simulation. Some pioneering teachers were willing to cross that divide during the twentieth century's morning light.

References

Boocock, S. S. and E. O Schild, ed. 1968. *Simulation Games in Learning*. Beverly Hills, CA: Sage Publications, Incorporated.

Clark, L. A. 1907. Group-Work in the High School. *The Elementary School Teacher* 7:335-344.

Cruickshank, D. R. and Tefler, R. 1980. Classroom Games and Simulations. *Theory into Practice* 1:75-80.

Dewey, J. and E. Dewey. 1962. *Schools of Tomorrow*. 3rd. ed. New York: E. P. Dutton and Company, Incorporated.

Froebel, F. 1907. *The Education of Man*. Translated by W. N. Hailmann. New York: D. Appleton and Company.

General der Infanterie a.D. Dannhauer. Das Reisswitzche Kriegsspeil von seinen Beginn bis zum Tode des Erfinders 1827. *The Reisswitz Wargame from the Beginning to the Death of Its Inventor, 1827*. Unpublished translation by William Leeson. Militar Wochenblatt, No. 56. Quoted in Perla, P. P. 1990. *The Art of Wargaming: A Guide for Professionals and Hobbyists*. Annapolis, Maryland: Naval Institute Press.

Gray, M. D. 1906. The Modern Roman State. *The School Review* 14:296-306.

Hughes, J. L. 1894. The Educational Value of Play and the Recent-Play Movement in Germany. *Educational Review* 9:327-336.

Jones, K. 1987. *Simulations: a Handbook for Teachers and Trainers*. London: Kogan Page.

Keith, J. A. 1907. Socializing the Materials and Methods of Education. *The School Review* 18:174-177.

Knowlton, D. C. 1910. An Athenian Assembly: An Experiment in History Teaching. *The School Review* 18:481-487.

Lee, J. 1994. *Effectiveness of the Use of Simulations in a Social Studies Classroom*. *ERIC*, ED 381 448, 1-68.

Maidment, R. and R. H. Bronstein. 1973. *Simulation Games: Design and Implementation*. Columbus, OH: Charles E. Merrill Publishing Company.

Perla, P. P. 1990. *The Art of Wargaming: a Guide for Professionals and Hobbyists*. Annapolis, Maryland: Naval Institute Press.

Richards, C. R. 1900. The Function of Hand Work in the School. *Teachers College Record* 1:249-259.

Sandars, J. 1975. *An Introduction to Wargaming*. London: Pelham Books Limited.

Stone, M. K. 1976. *Between Home and Community: Chronicle of the Francis W. Parker School 1901-1976*. Chicago: Francis W. Parker School.

Swift, E. J. 1914. *Learning by Doing*. Indianapolis, IN: The Bobbs-Merrill Company, 1914.

Tansey, P. J. 1973. *Educational Aspects of Simulation*. London: McGraw-Hill.

Taylor, J. L. and R. Walford. 1972. *Simulations in the Classroom*. London: Penguin Books, Limited.

Wells, C. B. 1907. Some Experimentation in Group-Work. *The Elementary School Teacher* 7:329-334.