2. THE PROJECT METHOD IN HISTORICAL CONTEXT

INTRODUCTION

Project-Based Learning (PBL) has been a long tradition in America's public schools, extending back to the 19th century to the work of Francis W. Parker and John Dewey. As a method for general education, the idea of project-based classroom instruction was co-opted from agriculture and the industrial arts and, after first being applied in the elementary schools, was extended to all grade levels. Initially focused on "real-world" problems with tangible, measurable outcomes, the project method was quickly adopted and applied to any activity of interest to students, however transient and/or insignificant. The lack of a succinct definition for the project method has prevented the assessment of its success, regardless, the "method" became the "current" model of instruction in all subjects for all students, often failing to meet the needs of children, teachers, or society. The project method, as a descriptive term for school *practice*, was replaced with child-centeredness and the activity curriculum. After a period of near obscurity, PBL has been reclaimed by educators to educate 21st-century students.

CHAPTER OUTCOMES

When you complete this chapter you should better understand:

- the origins of the idea of the Project Method
- the early applications of the Project Method
- reasons why the Project Method failed to have a lasting influence in 20th-century education practice

When you complete this chapter you should be able to:

- explain the origins of the Project Method
- identify some of the major proponents of the Project Method
- explain how the lack of a clear definition of the Project Method contributed to its decline in the public schools
- explain how the idea of the Project Method changed into the ideas of child-centeredness and the activity curriculum

In this chapter, the authors present (1) a brief history of the project method, both before and after Kilpatrick's widely read and cited article and (2) some of the issues related to the application of the project method in public school classrooms. We also examine the definition of "project" and how that definition was applied to the use of the project method in the school.

When William Heard Kilpatrick published "The Project Method" in the *Teachers College Record* in September of 1918, he started the piece saying, "The word 'project' is perhaps the latest arrival to knock for admittance at the door of educational terminology" (p. 319). He also posed the following two questions:

... is there behind the proposed term ... a valid notion or concept which proposes to render appreciable service in educational thinking? Second, if we grant the foregoing, does the term "project" fitly designate the waiting concept? (p. 319)

Kilpatrick's questions encompassed the whole range of issues related to the "project method," both its history and application to practice. Over the next five years, many authors offered definitions and explanations for the project method and how it should be enacted in schools. However, the definitions were diverse enough to encompass almost any instruction and failed to give teachers specific criteria against which they could measure their practice and, in the end, satisfied neither the theorists nor the practitioners.

Kilpatrick is frequently cited as one of the most popular professors and often criticized scholars of the Progressive Era; ultimately, his career spanned six decades (Cremin, 1961, p. 220; Kliebard, 1986, p. 176; Ravitch, 2000, p. 178). At the time that he published "The Project Method," however, Kilpatrick was struggling to earn a promotion to full professor at Teachers College at Columbia University. Before joining the faculty in 1911, Kilpatrick had been a student at Teachers College, studying under Dewey. Consequently, Dewey pragmatism and experiential learning philosophy shaped Kilpatrick's pedagogical theories and, more specifically, his approach to the project method (Cremin, 1961, p. 215). The attachment of Kilpatrick to the project method in twentieth century educational literature is due to the fact that his article was reprinted tens of thousands of times all over the world (Cremin, 1961, p. 217; Kliebard, 1986, p. 159). Despite being identified as the father of the modern project method, Kilpatrick readily acknowledged that he is a late comer to the use of the term project, that he is unaware of its heritage, but that he sees value in using the term. "I did not invent the term nor did I start it on its educational career. Indeed, I do not know how long it has already been in use. I did, however, consciously appropriate the word to designate the typical unit of the worthy life described above?" (1918, p. 320).

Although Kilpatrick is unconcerned with pinning down the beginnings of the project method, other authors have located the origin of the term in agriculture, manual training, and domestic science (Horn, 1922), or with Dewey and others at Chicago and Teachers College (Parker, 1922b). Parker (1922b) also credits Francis W. Parker and C. R. Richards for popularizing the idea of pupil planning as part of the project process as early as 1901 (pp. 427-429). von Hofe (1916) wrote, "The sixth-grade pupils in the Horace Mann School are studying science regardless of every artificial division. The class chooses a project, something that has attracted attention and in which they are vitally interested. The teacher then presents the information to follow not the so-called logical development found in textbooks but the trend of thought of the pupils" (pp. 240-241). While not defining the practice as a "method," von Hofe described a practice that would shortly become popularized as the project method.

Writing in 1997, Knoll states

Recently, however, historical research has made great progress in answering the question of when and where the term "project"-"progetto" in Italian, "projet" in French, "projekt" in German, and "proekt" in Russian-was used in the past to denote an educational and learning device. According to recent studies, the "project" as a method of institutionalized instruction is not a child of the industrial and progressive education movement that arose in the United States at the end of the 19th century. Rather it grew out of the architectural and engineering education movement that began in Italy during the late 16th century (Knoll 1991a, 1991b, 1991c; Schöller, 1993; Weiss, 1982). The long and distinguished history of the project method can be divided into five phases:

1590-1765: The beginnings of project work at architectural schools in Europe.

1765-1880: The project as a regular teaching method and its transplantation to America.

1880-1915: Work on projects in manual training and in general public schools.

1915-1965: Redefinition of the project method and its transplantation from America back to Europe.

1965-today: Rediscovery of the project idea and the third wave of its international dissemination (Knoll, 1997).

Still others push the origins back to the "Sloyd" system of manual training, which emphasized domestic projects for the purpose of building neatness, accuracy, and carefulness, and a respect for labor in a social context (Noyes, 1909). Sloyd education first took root in 1865 in Finland under the influence of Uno Cygnaeus, a devoted follower of Froebel and Pestalozzi – but gained widespread popularity at Otto Salomon's school in Naas, Sweden (MacDonald, 2004, p. 306). During the 1870s and 1880s teachers and scholars from around the world traveled to Naas to undergo Salomon's courses in sloyd. According to one such scholar, Evelyn Chapman (1887), Salomon's *educational sloyd* was introduced into "France, Belgium, Germany, Austria, Russia, and the United States" and "even far-distant Japan" (p. 269). Given Cygnaeus's admiration for Froebel, it is perhaps unsurprising that Chapman goes on to draw a connection between sloyd and kindergarten, "... in the adoption of the kindergarten system, the very soul of which is its response to the child's need of activity and production; and sloyd is the same principle at work, only in a form suited to the growing powers of our boys and girls" (p. 269).

In the United States, perhaps the most prominent example was the Sloyd Training School for teachers in Boston, Massachusetts. According to its founder and principal, Gustaf Larsson (1902, p. 67), approximately 22,000 pupils were receiving instruction from its graduates in the year 1900. Notwithstanding, while there are clearly overlapping themes between the project method and educational sloyd, the extent to which sloyd influenced the project method remains unclear.

Unconcerned with these historical considerations, Kilpatrick's goal in his article was to lay out the pedagogical and psychological principles of learning on which the idea of the project was based and provide direction to teachers. He goes on to say that the purposeful act is the basis for a worthy life and that we admire the "man who is master of his fate, who with deliberate regard for a total situation forms clear and farreaching purposes, who plans and executes with nice care the purposes so formed. A man who habitually so regulates his life with reference to worthy social aims meets at once the demands for practical efficiency and moral responsibility" (1918, p. 322). Kilpatrick, following the idea of Dewey and others that school is not for life but is life, continues to explain the value of a purposeful act, "As a purposeful act is thus the typical unit of a worthy life in a democratic society, so also should it be made the typical unit of school procedure. ... education based on the purposeful act prepares best for life while at the same time it constitutes the present worthy life itself" (1918, p. 323). Dewey's thought is often difficult to pin down, but the roots of Kilpatrick's ideas are consistently evident in Dewey's writings of the late nineteenth and early twentieth centuries. In fact, in his most notable work on education, Democracy and Education, Dewey quite directly connects education as a purpose of life. In one of his more concise statements on the issue he says, "The continuity of any experience, through renewing the social group is a literal fact. Education in its broadest sense, is the means of this social continuity of life" (Dewey, 1916, p. 2).

In his 1997 article, Knoll summarized Kilpatrick's ideas on the project

Kilpatrick (1925) defined the project as a "hearty *purposeful* act." "Purpose" presupposed freedom of action and could not be dictated. If, however, "the purpose dies and the teacher still requires the completion of what was begun, then it [the project] becomes a task"-mere work and drudgery (Kilpatrick, 1925, p. 348). Thus, Kilpatrick established student motivation as the crucial feature of the project method. Whatever the child undertook, as long as it was done "purposefully," was a project. No aspect of valuable life was excluded. Kilpatrick (1918) drew up a typology of projects ranging from constructing a machine via solving a mathematical problem and learning French vocabulary, to watching a sunset and listening to a sonata of Beethoven. In contrast to his predecessors, Kilpatrick did not link the project to specific subjects and areas of learning such as manual training or constructive occupations; the project did not even require active doing and participating. Children who presented a play executed a project, as did those children sitting in the audience, heartily enjoying it.

Despite Kilpatrick's efforts to ground the project method in Dewey's thought, seldom in the many articles and books that followed and explanations of the method of the project does one find either the connection between the purposeful act (the project) and preparation for democratic life or that education is life; the first seemingly is ignored, the second seemingly a given. One difficulty adopters of the project method encountered was, in addition to the attempt to apply a method used in manual training and agriculture to academic subjects and questions of its applicability to non-manual subjects (Ruediger, 1923), was the lack of a concise definition. Several authors questioned the appropriateness of the method for academic subjects. Ruediger found the project method inappropriate, writing

The fact that the project idea in its original meaning is not applicable to the teaching of academic subjects has given rise to a number of interesting yet confusing developments. As used in agricultural education, the project has reference to the use of productive activities for teaching purposes. ... something of objective significance is produced. A genuine vocational activity, somewhat circumscribed perhaps, is used for educative purposes. When we come to the academic subjects this idea of a project is not so easily realized. In reading, in arithmetic, in geography, and in history it is not easy for the pupil to produce something of inherent significance, something that society values regardless of personal sentiment. (p. 243)

Horn's criticism of the project method also went to the motivation and appropriateness of the application of the method to academic subjects. "The most serious confusion in recent years has resulted from the teaching of those who define the 'project' as a wholehearted, purposeful act project by children" (1922, p. 95) showed Horn's concern for the lack of preciseness and relationship to social utility and purpose. He wrote, in his 1922 article, that the original purpose of the project had been ignored and student interest and choosing had become guiding principles, rather than the nature of the project.

The worth of such "projects" [referring to traditional projects such as baking a cake, raising a plot of corn, building a bookcase] was measured by the degree to which they duplicated projects and activities found in life, by the degree to which they use the best materials and best methods, and by the degree of success that resulted. These "projects" may be defined as highly practical, problematic activities taken in

their natural setting and involving the use of concrete materials, usually in a constructive way. They are to be distinguished, in general, from other school activities in that: (1) they are organized more directly about the activities of life outside the school; (2) they are more concrete; and (3) they afford a better test of working knowledge. (p. 93)

Despite his best efforts, Kilpatrick contributed to the uncertainty of what is a "project" when he wrote

[T]he richness of life depends exactly on its tendency to lead one on to other like fruitful activity; that the degree of this tendency consists exactly in the educative effect of the activity involved' and that we may therefore take as a criterion of the value of any activity – whether intentionally educative or not – its tendency to directly or indirectly to lead the individual and others whom he touches on to other like fruitful activity. (1918, p. 328)

It is the special duty and opportunity of the teacher to guide the pupil through his present interests and achievement into the wider interests and achievement demanded by the wider social life of the older world. ... Under the eye of the skillful teacher the children as an embryonic society will make increasingly finer discriminations as to what is right and proper. ... The teacher's success – if we believe in democracy – will consist in gradually eliminating himself or herself from the success of the procedure. (1918, pp. 329-330)

Here then Kilpatrick sets the stage for the removal of the teacher from the process of choosing activities but this only occurs after the child has developed skill and knowledge necessary to choose wisely. The developed abilities of the child become less important than the child's interest in later publications explaining the project method.

Kilpatrick is true to his ideas when he defined the project "to mean any unit of purposeful experience, any instance of purposeful activity where the dominating purpose, as an inner urge, (1) fixes the aim of the action, (2) guides its process, and (3) furnishes its drive, its inner motivation. The project thus may refer to any kind or variety of life experience which is in fact actuated by a dominating purpose" (Kilpatrick, Bagley, Bonser, Hosic, & Hatch, 1921, p. 283). This broad definition thus became the justification for most any type of educational activity that either motivated students or students said motivated them to learn, regardless of the social utility of the product or the ability of students to benefit from the activity or their maturity to allow them to conduct the activity.

Parker, in one of his 1922 articles, provided the briefest definition of project teaching by writing, "A pupil project is a unit of practical activity planned by the pupils" as a way of summarizing his longer definition of

The central element in project teaching is the planning by pupils of some practical activity, something to be done. Hence, a pupil-project is any unit of activity that makes the pupil responsible for such planning. It gives them practice in devising ways and means and in selecting and rejecting method of achieving some definite practical end. This conception conforms with the dictionary definition of a project as "something of a practical nature thrown our for the consideration of its being done" … Furthermore, it describes with considerable precision a specific type of improved teaching that has become common in progressive experimental schools since 1900. (1922a, p. 335)

Parker thus places the interest of and planning of action by the student as the central tenet of the project method. He defines practical as "not theoretical" but does not ground the practical in utility or social purpose beyond that desired by the student.

Parker (1922a) reported, as an example of project teaching, a historical construction project where fifthgrade students constructed a castle from cardboard to illustrate life in the medieval period and wrote a poem and play concerning their work. Here one sees an example for which Ruediger later criticized the project method as producing something with no inherent significance but, which Parker justified, because he believed it had high motivational value.

Freeland, once a student teacher supervisor and principal of the teacher training school at Colorado State Teachers College, makes little distinction between problem and project teaching and wrote of their relatedness by first defining the problem method and then the project.

The problem is used to appeal to and develop the child's thought (p. 6). ... The project may be defined in relation to the problem as something the child is interested in doing and which may involve thinking, but need not always do so. ... If it involves much thinking, it may contain problems (Freeland, 1922, p. 7).

[T]he project is different from the problem in that its essential feature is the provision of something to organize, investigate, or accomplish, rather than to stimulate thought. It may be a problem or part of a problem, and it may embrace problems. The more good problems a project affords the better it is for educational purposes. To afford something to do, the project must necessarily arise from the interests of the children. (Freeland, 1922, p. 45)

Freeland then still intends teachers to focus on the nature of the instructional act rather than focusing on the interest or intentions expressed by students. "The distinct advantage of the project method over the old topic or question and answer method is that it provides for continuous work on the part of the pupil rather than assignment from day to day" (p. 46).

The idea of definition became, to later authors, less of an issue than the adoption of the philosophy of the project method and its focus on children's interests. Hosic and Chase, an associate professor and Teachers College and elementary school principal respectively, wrote in the Preface to their book, *Brief Guide to the Project Method*, "There is a limit to the amount of abstract theory which workers in the schools, and students preparing to join them can assimilate and apply" and "However imperfectly we have interpreted the project method, we believe that it is a fruitful concept of living, learning, and teaching, destined to influence profoundly the educational practices of the future, and that for good" (1924, p. iii). They conclude their introductory chapter with the sentences

[T]he Project Method means providing opportunity for children to engage in living, in satisfying, worthwhile enterprises – worth-while to *them*; it means guiding and assisting them to *participate* in these enterprises so that they may reap to the full the possible benefits. ... The Project Method, then, is a point of view rather than a procedure. [emphasis in original] (1924, p. 7)

In his 1926 book, *Modern Methods in High School Teaching*, Douglass, devotes separate chapters to Problem Teaching (chapter 10, pp. 295-322) and Project Teaching (chapter 11, pp. 324-356) making a clear distinction that projects could include problems and that problems could, at some point, become projects (pp. 324-325). Douglass, while making a distinction, sees the classification of an activity as a "problem" or a "project" as something teachers should not spend a lot of time on.

The underlying principles of procedure for problems and projects are essentially the same. Problems and projects possess very much the same values, and the merits of them as teaching procedures are based on the same psychological facts. It is not necessary, or desirable even if possible, to attempt here to draw a sharp distinction between the two. (p. 324)

Teachers are inclined to waste much valuable time in quibbling over what technically constitutes a project and what does not. An activity may technically constitute a project and yet be a very inferior educational activity. Merely being a project does not necessarily carry with it merit. A good problem, yes, even a good, old-fashioned, arbitrary, autocratic, daily assignment and recitation, is a much better teaching procedure than a poorly managed project. Not much good can come from merely learning the definition of a project. What is important for teachers is to appreciate the psychological principles which lie behind the project, and which account for its merit and effectiveness. (p. 326)

A little over 20 years later, in another version of the text, Douglass and Mills (1948) devote only 8+ pages to the project method as a part of a chapter on Teaching Units of Learning and 9+ pages to problem teaching as part of a chapter on Questions and Problems in Teaching. The authors cite Douglass' 1926 definition of project in describing a project. "The project as used in a teaching is a unit of activity carried on by the learner in a natural and lifelike manner, and in a spirit of purpose to accomplish a definite, attractive, and seemingly attainable goal" (Douglass, 1926, p. 325; Douglass & Mills, 1948, p. 209).

Although early in his 1918 article, Kilpatrick emphasizes the connection between a whole-hearted purposeful activity and the social environment in which the activity takes place (p. 320), the ideas of whole-hearted and purposeful came to dominate the defining attributes of the activity.

And, while in 1918, initially emphasizing the necessity or importance of individualized self-directed motivation on the part of the student in choosing the purposeful activity, by the time he writes his 1925 book, *Foundations of Method*, Kilpatrick he has accepted the fact that the teacher may have a role in the planning and encouragement of interest in the project "We have, so far, not based any argument on the child's originating or even selecting (in the sense of his deciding) what shall be done. So far, all that we have claimed will be met if the child whole-heartedly accepts and adopts the teacher's suggestion" (1925, p. 207).

Douglass adheres more closely to Kilpatrick's original statement on self-selection as he includes as one of the characteristics that a project must include as "The learner approaches the task in an attitude of purposefulness; it is a self-imposed task, rather than one imposed arbitrarily by the teacher or the course of study" (Douglass, 1926, p. 325). Douglass does not however ignore the role of the teacher in planning and assisting students in the selection and management of projects. "As in the case with any teaching procedure, the project method in itself does not provide a complete educative situation. Merely having students purposing, planning and executing projects may or may not be good procedure, depending upon what projects are being completed and the nature of the procedure followed" (p. 341). This statement was followed by 8 criteria a teacher should use in selecting projects.

By the mid 1920s, the project method, which seemingly had something for every student and teacher, had been used to justify the child-centered and activity movements where all curricular plans were to begin with the interests of the child, even if the child was not motivated to have interests. These concerns were not missed by those promoting the project method, even as the idea of the project was being developed. Bonser, an associate professor at Teachers College wrote

A second danger of misinterpretation is that of assuming that all expressed interests of children are of equal worth. By such an interpretation, that which is trivial or relatively insignificant is permitted to divert efforts from activities which in themselves lead to higher levels of interest and worth. ... One very important function of the teacher is to select and direct interests and activities of children so that they may continuously lead forward and upward to higher stages. (Kilpatrick et al., 1921, pp. 298-299)

In attempting to use the interests of children, many teachers are tempted simply to "turn the children loose," and to allow them to follow any interests which they individually express, or to do nothing to stimulate desirable interests if such are not expressed. This results in indulgence rather than direction, in a form of anarchy rather than of orderly procedure. It has already been noted that all interests and activities are not of equal worth. It is the providence of the teacher to select, stimulate, and direct activities whose worth is high n leading forward toward objectives of unquestioned value. (Kilpatrick et al., 1921, p. 302)

Of all the speakers in the symposium on the project method (Kilpatrick et al., 1921), Hosic was the only one to reiterate Kilpatrick's early emphasis on democracy as his fourth point.

The project method is the application of the principles of democracy. Any one who will undertake to put into effect in his school the factors of socialization as set forth by Professor Dewey, namely, common aims, the spirit of cooperation, and the division of labor, will find that he is using the project method. No special devices for socializing the recitation will be necessary. (p. 306).

Later, in continuing the concern over the over-generalization of the tenets of the project method, Hosic and Chase (1925), in their chapter on "Dangers and Difficulties," warn against mechanistically turning control of the class over to students.

First, let us observe that the project idea should not be interpreted as a doctrine of *laissez faire*. The fact that the project teacher invites the pupils to assume a large measure of responsibility does not mean that she turns the school over to them. Both the community and the individual are to be served. The school is intended to provide a selected and controlled environment. If this were not so, the education of the children might as well be left to the more or less accidental ministrations of other agencies. (p. 86)

The reaction to the student-centeredness of the project method began almost as it was gaining popular acceptance. Curriculum theorists and practitioners were concerned over the lack of direction and purpose of the method. "According to Dewey, the method of surrounding the pupil with materials but not suggesting an end result or a plan and simply letting pupils respond according to whim, was ridiculous" (Tanner & Tanner, 1980, p. 295). Rugg and Schumaker, in their 1928 work, *The Child-Centered School*, wrote, "We dare not leave longer to chance – to spontaneous, overt symptoms of interest on the part of occasional pupils – the solution to this important and difficult problem of construction of curriculum for maximum growth" (p. 118).

The project method thus led to the notion that activity on the part of students was a measure of success and critical to learning. By the 1930s, the project method, as seen in schools, was under attack by the very person who supposedly was one of the originators of the method, John Dewey. Dewey was concerned that teachers had abandoned their proper role in education. "It is the business of the educator to study the tendencies of the young so as to be more consciously aware than are the children themselves what the latter need and want. Any other course transfers the responsibility of the teacher to those taught" (Dewey, 1934, p. 85). Also, by the

1930s, public schools were under scrutiny and attack for their perceived role in either not preventing the Great Depression or not "fixing" the Great Depression once it had begun and educational innovation began to fade. In summarizing the failure of the child-centered project method, Tanner and Tanner wrote

... experience had made it abundantly clear to many educational theorists that a curriculum based solely on the spontaneous interests of childhood was an impossibility. Such a program could have no sequence and no predetermined outcomes, not even predetermined psychological outcomes. Even a play school had to have objectives and a program that was planned to meet those objectives. Otherwise, the child might as well stay home. (1980, pp. 296-297)

Projects, as a form of child-centeredness, again appear on the educational scene in the 30s in the form of the *Building America* Series, edited by Paul Hanna and sponsored by the Social Frontier group at Teachers College. Rugg, also a member of the Social Frontier group at Teachers College, identified the project method as a useful method in social reconstruction at the national level (Rugg, 1933). In his book, *Educational Frontier*, Kilpatrick (1933) discusses the social and educational reconstructivism movement of the 1930s. More specifically Kilpatrick addresses the need to reform the education system to prepare students for life in contemporary society – a society that requires collaborative efforts to solve problems. In this book, Kilpatrick offers a societal justification for using the project method in schools to achieve social reconstruction.

Later, in the immediate post-war period of the late 1940s and early 1950s, in an attempt to meet the needs of a changing society where more students enrolled in and graduated from high school, the project method reappeared in the form of the life adjustment or continuing life situations movement led by Florence Stratemeyer, again from Teachers College. Just as the project movement had been criticized for its attention to the immediate interests of children, so too was the life-situations curriculum.

Although the aim of this curriculum is to meet the needs of children and youth throughout their lives, needs also determine the choices of the problems to be studied. ... Like Kilpatrick, Stratemeyer and her associates stressed that not all children's interests are equally valuable ... but, as in the case of Kilpatrick's project method, it is preferable of the problems to be based on the child's immediate concerns rather than on adult claims of children's needs. (Tanner & Tanner, 1980, p. 387)

The various teaching innovations of the previous 50 or so years came under attack in the 1950s and soon disappeared from classrooms. The project method had a brief revival in the 1960s in response to the perception that education was failing the nation in science and mathematics. Educators again took an interest in the motivation of children to learn, thinking "that the thrill of discovering scientific concept autonomously would not only result in more effective learning but also instill in children the desire for further, more significant, discoveries" (Tanner & Tanner, 1980, p. 403). However, as Tanner and Tanner write, "this time the model was discipline-focused, not social-problem focused. Discover teaching was a disciplinary effort to teach children to think like scientists instead of children" (p. 403).

THE PAST AND THE FUTURE OF PROJECT LEARNING

As a popular method for general education in the early to mid 20th century, the project method borrowed its theory from agriculture and the industrial arts education and applied that theory to all subjects. However, lacking a clear definition, educational leaders and teachers often used their "definitions" to justify classroom activities driven solely by student interest, regardless of the educational value of the activity. Some (e.g., Douglass 1926, Hosic and Chase 1924) tried to prevent the overgeneralization of the term in classrooms; few practitioners listened and the focus became the interests of students. The social upheavals of the Great Depression and World War II refocused parents and leaders on societal needs rather than the wants of learners. Despite the brief activity in the later 1940s of the life-adjustment movement, the project method was thoroughly rejected by educational leaders as failing to meet the needs of children, teachers, or society.

In the last 10 years, augmented by research on learning and the effect of the learning environment on the learner, Kilpatrick's goal of explaining the pedagogical and psychological principles of learning has come closer to being realized. The next chapter, the *Theoretical Framework for STEM PBL*, provides guidelines for implementing PBL in today's classrooms. Although the question of applying the project method to academic subjects was never answered in the 20th century, STEM PBL illustrates that the project method is appropriate for academic subjects.

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