Abstract
This article provides a review of research (2000-2011) regarding the effectiveness of project-based instruction in preschool, elementary and secondary school classroom settings, including academic, learner, and teacher response outcomes. First, the review provides some historical context, and a definition of project-based learning. Next, the reviewer synthesizes several themes emergent in the literature, including student and teacher attitudes, academic outcomes, and information about what recent research on project-based learning has shown as it has been used with specific student subgroups. Finally, the author provides a perspective on factors that can enhance or detract from instructional success with project based methodology, and suggest directions for further research. Overall, current research offers a generally positive view of project-based methodology, with some practical and theoretical caveats voiced by practitioners and researchers.

Introduction
Project-based learning, a teaching methodology that utilizes student-centered projects to facilitate student learning (Mergendoller, 2006), is touted as superior to traditional teaching methods in improving problem solving and thinking skills, and engaging students in their learning (Berends, Boersma & Weggemann, 2003; Scarborough, Bresnen, Edelmann, Laurent, Newell & Swann, 2004; Tsang, 1997). Popular in pre-professional training in medicine, science, technology, engineering and mathematics careers since the 1970’s, momentum has more recently developed to extend these practices to elementary and secondary classrooms (Buck Institute, 2005; Knoll, 1997).

Definition
While most commonly known as a part of adult education, project-based learning for school-age children is not new. Project-based learning can be described as student-centered instruction that occurs over an extended time period, during which students select, plan, investigate and produce a product, presentation or performance that answers a real-world question or responds to an authentic challenge. Teachers generally serve as facilitators, providing scaffolding, guidance and strategic instruction as the process unfolds. According to an historical survey of project- and problem-based learning undertaken by Michael Knoll at the University of Bayreuth in Germany (Knoll, 2006), project methodology in American education can be traced to an early 20th century description offered by William H. Kilpatrick (1918), which referred to the Project Method as “a hearty, purposeful act”, generally a project or pursuit, undertaken by the child, which has four distinct, student-centered phases: purposing, planning, executing and judging. Ideas such as these, combined with the model for scientific inquiry, have contributed to a
variety of student-centered methods such as problem-based, case-based, discovery learning, and expeditionary learning (Knoll, 1997; Thomas, 2000; Prince & Felder, 2007).

In a review of the research on project-based learning, Thomas (2000) identified five distinguishing features of project-based learning:

- The use of projects that focus on content that is central to the curriculum. These projects become the primary vehicle for content learning, and often, assessment.
- Projects are based on questions of importance or driving questions (Blumenfeld et al., 1991). Driving questions must be germane to the content, and crafted both to engender optimal student engagement and foster active intellectual pursuit of solutions.
- Projects involve students in ways that require them to identify problems, develop and design solutions, and create an end product such as a presentation, report, invention, or model.
- Projects are student-centered to the greatest extent possible. Teachers serve as resources, facilitators and guides, but it is the students who define, choose and carry out their projects.
- Projects are developed from reality-based ideas and problems rather than on academic exercises and pursuits. The projects represent authentic efforts in solving or investigating real-world dilemmas.

Both Thomas (2000) and Kilpatrick (1918) emphasize depth of learning and intrinsic motivation as key benefits of this methodology, as well as a focus on student-centered, systematic inquiry.

A number of researchers and educational theorists have adopted the principles of project-based learning as a foundation for related methodologies (Knoll, 1997; Prince & Felder, 2006). The goal of these methodologies is to move education toward more student centered, inquiry-based, active learning methods. The intent is to help students become self-directed learners who can apply sound higher-order thinking skills. Meyer (2004) describes three broad inquiry-based approaches that emerged as a response to the rise of constructivist ideas about learning in the 1960’s: inquiry on the basis of understanding problem-solving rules based on the work of Jerome S. Bruner; in the 1970’s, Jean Piaget’s conservation of strategies applied to problem solving, and Seymour Papert’s contributions to discovery learning applied to computer programming concepts. Far from supporting such approaches, however, Mayer contends that constructivist, student-centered, discovery learning that minimizes the need for expert guidance and downplays the role of the teacher has repeatedly failed to deliver promised gains in student autonomy and the development of problem solving and thinking skills (Kirschner, Sweller & Clark, 2006; Mayer, 2004).

Mayer (2004) is not alone in challenging the utility of student-centered teaching. Some theorists believe that such teaching methods are in direct conflict with cognition research that demonstrates not only that learners in the novice stage do not attend to critical problem features or employ effective problem solving strategies, but that they should not necessarily be encouraged to do so. Kirschner, Sweller & Clark (2006) assert that the ideals of constructivist, project-based learning may miss the mark by leaving too much at the discretion of novice learners. They suggest that leaving students to self-direct can result in sustained misconceptions and multiple “false starts”. Accordingly, adherence to a highly student-centered approach that does not promote strategic teacher intervention and guidance may prove inefficient and/or ineffective (Bransford, et al., 2000; Kirschner, Sweller & Clark, 2006). Similarly, Blumenfeld, et al. (1998) described numerous classrooms where project based learning activities were being conducted, but where project results did not live up to expectations because the students got “stuck” or channeled their inquiry efforts in unproductive directions. They concluded that teacher involvement and guidance is needed for optimal learning.
Regardless of the opinions of theorists, the idea that students can become independent, motivated learners, able to apply their skills to real-world problems through personal and group inquiry is an energizing prospect that, as Kirschner (2006) put it, “appeals to (educators) intuitively”, and project-based programs and materials such as Expeditionary Learning (http://elschools.org), the The Jasper Series from Vanderbilt University (The Adventures of Jasper Woodbury Videodisc Series, 1992), and other commercial products which bundle resources and simplify implementation for practitioners, have met with some commercial and pragmatic success (David, 2008; Thomas, 2000). A number of school reform efforts (e.g., Ravitz, 2008) utilize project-based learning as a cornerstone of their design. Yet, for most schools and teachers, project-based instruction is carried out on an individual classroom scale that exists outside the eye of the research community. A review of the literature prior to the year 1999 (Thomas, 2000) found little research on home-grown, project-based learning in single schools and classrooms, while more recently, David (2008) reported that although project-based instructional practice continues to take place most typically in isolated schools and classrooms, little is known about the effectiveness of this approach in these settings, particularly when compared with other methods of instruction.

What does current research say about the effectiveness of project-based learning at the individual classroom level? The purpose of this literature review is to summarize peer-reviewed research on the effectiveness of project-based learning over the past decade, as it pertains to prekindergarten through 12th grade classrooms. It includes studies that address academic outcomes, developmental gains, student perceptions about project-based versus traditional learning, attitudes toward subject matter, group process, perceptions of peers, and in some cases, perceptions of efficacy. Efficacy in this context can be defined as a belief in the abilities of a group or an individual to meet a goal, or achieve a desired outcome.

**Method**

The review was conducted by means of searches of electronic databases of education-related journals and publications, including *Academic Search Premier, Education Research Complete* and *ERIC*. Articles were identified using the terms ‘project method’ and ‘teaching’ in combination with search restrictions to peer-reviewed articles in the English language that were published between January 2000 and June 2011. The initial search results yielded 768 articles. Manual sorting of these results was used to retain only articles pertaining to research relating to prekindergarten through 12th grade students and related to the instructional effectiveness of project-based learning as carried out in classroom settings (as opposed to distance learning), and the reference sections of the remaining articles checked for other articles that would meet the review criteria. Altogether, a total of seventeen articles were identified for inclusion.

In order to provide a frame of reference for the varying quality of research methods, information, and reporting across the included articles, the author utilized a screening process, adapted from Fink (2005), that focused on identifying whether or not:

(a) the main outcome variables were defined;
(b) evidence was offered as to the appropriateness of any psychometric instruments used in data collection;
(c) data were collected prospectively;
(d) the study population was randomized;
(e) the final sample size was explained and/or response rate adequacy for interviews and surveys was explained;
(f) the information offered was directly related to the effectiveness of project-based learning;
(g) the researchers provided psychometric evidence for the validity of the data sources used for the main variables (i.e., achievement, self-efficacy, IT skills, group process skills, etc.), and
(h) the data analysis process was explicit.

Points were awarded for each factor, with one point representing partial or present-but-unclear elements and two points representing elements that were well-described and fully in place. No points were given if an element was absent, or the process for development or inclusion could not be determined. In the case of studies re-published in English but that were originally documented in other languages, each study was reviewed as carefully as possible to determine the researchers’ intended meaning and minimize translation effects. A list of the articles included and the scores for each are provided in Table 1. Summary information for the articles is provided in Table 2.

Table 1. Evaluative scores for articles identified in the literature review.

<table>
<thead>
<tr>
<th>Category Scores</th>
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<tbody>
<tr>
<td>Article</td>
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<tr>
<td>Alacapinar, 2008</td>
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<td>Aral, Kandir, Ayhan &amp; Yasir, 2010</td>
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<td>Baumgartner &amp; Zabin, 2008</td>
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<td>Beneke &amp; Ostrosky, 2008</td>
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<td>Bickaki &amp; Gursoy, 2010</td>
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<td>Cheng, Lam &amp; Chan, 2008</td>
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<td>Chu, Tse &amp; Chow, 2011</td>
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<td>Duncan &amp; Tseng, 2010</td>
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<td>Faris, 2008</td>
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<td>Gutelkin, 2005</td>
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<td>Geier, et al., 2008</td>
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<td>Grant &amp; Branch, 2005</td>
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<td>Hertzog, 2007</td>
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<tr>
<td>Kaldi, Fillipatou &amp; Govaris, 2011</td>
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<td>Mergendoller &amp; Maxwell, 2006</td>
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<td>Mioduser &amp; Betzer, 2007</td>
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<td>Tal, Krajcik &amp; Blumenfeld, 2006</td>
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Table 2. *Summary information for articles included in the literature review.*

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Location</th>
<th>School Setting</th>
<th>Focus of Study</th>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>Alacapinar, F. (2008)</td>
<td>Turkey</td>
<td>Public, 5th</td>
<td><em>Quasi-Experimental, Qualitative:</em> The effects of project-based learning (PBL) on cognitive and psychomotor achievements and affective domain. Data collection: Video, interviews, psychomotor instrument.</td>
<td>Students in the experimental group showed gains in achievement, and in cognitive and psychomotor domains. Students enjoyed the project work and noted improved self-confidence, creativity, ability to plan and develop ideas, problem-solving skills, and the benefits of working in groups.</td>
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<tr>
<td>Aral, et al. (2010)</td>
<td>Turkey</td>
<td>Public, K</td>
<td><em>Quasi-Experimental:</em> The effects of project-based instruction on learning outcomes. Data Collection: BBCS-R, a measure of basic concepts, for kindergarten</td>
<td>Students in the experimental group showed slightly greater gains after weekly PBL instruction over 12 weeks. Results on the BBCS-R were not strongly indicative of difference, however.</td>
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<tr>
<td>Baumgartner, et al. (2008)</td>
<td>United States</td>
<td>Charter, 9th</td>
<td><em>Qualitative:</em> Examined whether PBL would increase students’ knowledge of scientific investigation and foster positive attitudes about the content. Data Collection: Pre/post self-reporting of content knowledge, essays, field journals.</td>
<td>Students reported increased content knowledge, and understanding of the processes of scientific investigation. Student comments reflected a change toward more positive views by the conclusion of the project.</td>
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<tr>
<td>Beneke &amp; Ostrosky (2008)</td>
<td>United States</td>
<td>Public, Pre-K</td>
<td><em>Qualitative:</em> Explored preschool teacher perceptions of PBL and the responses of their students. Data Collection: Pre/post interviews</td>
<td>All teachers reported positive views of PBL. Most felt that their students were successful, noting improved interest and motivation, a shift from functional to representational play, and fewer disciplinary issues. The projects offered ways for differently-abled students to serve as experts in certain areas. Most teachers felt there were benefits in bringing &quot;real&quot; objects into the classroom for play and construction.</td>
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<tr>
<td>Bicaki &amp; Gursoy (2010)</td>
<td>Turkey</td>
<td>Private, Pre-K</td>
<td><em>Quasi-Experimental:</em> The effect of PBL on specific developmental areas in preschool children. Data Collection: Pre/post testing on the Brigance Early Development Inventory II and retention test.</td>
<td>The children in the experimental group scored higher on the posttest on the overall scores of the Brigance II, more specifically in the areas of receptive and productive language area A follow up test indicated that these gains were long-term.</td>
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<tr>
<td>Author(s)</td>
<td>Location</td>
<td>Grade</td>
<td>Study Type</td>
<td>Methodology Description</td>
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<tr>
<td>Cheng, et al. (2008)</td>
<td>Hong Kong</td>
<td>7th-9th</td>
<td>Quantitative: The effect of achievement level and group heterogeneity on group process and self-efficacy in PBL. Data Collection: Questionnaire of group- and self-efficacy.</td>
<td>The quality of group process was determined to be a predictor of self-efficacy in PBL for both high and low achieving students. Group makeup did not appear to be a predictor for efficacy for high or low achieving students.</td>
</tr>
<tr>
<td>Chu, et al. (2011)</td>
<td>Hong Kong</td>
<td>4th</td>
<td>Mixed Methods: The effects of combining a collaborative teaching approach with inquiry project-based learning. Data Collection: Pre and post intervention student questionnaires and semi-structured parent and student interviews.</td>
<td>Collaborative and project-based approaches had a positive effect on student development of information literacy and information technology (IT) skills. Students also reported that the IT skills they learned had a discernible application.</td>
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<tr>
<td>Duncan &amp; Tseng (2010)</td>
<td>United States</td>
<td>9th</td>
<td>Mixed Methods: To document the development and pilot implementation of a PBL biology unit. Data Collection: Video/audio, student artifacts, observation, curriculum-based measures.</td>
<td>Substantial general gains in student learning of content concepts, although the depth and detail of what was learned was less than researchers had anticipated. When compared to achievement results in a related study, PBL students showed improved understanding overall.</td>
</tr>
<tr>
<td>Faris (2008)</td>
<td>Qatar</td>
<td>Private, 9th</td>
<td>Qualitative: To determine if PBL affects student perceptions of group work, content and PBL itself. Data collection: Questionnaire, observations.</td>
<td>Students viewed group work more positively and the subject matter more favorably after participation in a project-based science unit.</td>
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<tr>
<td>Geier, et al. (2008)</td>
<td>United States</td>
<td>7th-8th</td>
<td>Quasi-Experimental: To compare student science achievement under PBL to achievement under traditional instruction. Data Collection: Standardized assessments in science.</td>
<td>PBL was shown to be more effective in delivering content. Researchers point out that this study was conducted within a wider school reform, and that other factors may also have contributed to the results.</td>
</tr>
<tr>
<td>Grant &amp; Branch (2005)</td>
<td>United States</td>
<td>Private, 8th</td>
<td>Qualitative (Case Study): To explore how individual differences and abilities (multiple intelligences) were employed in the completion of projects. Data collection: Interviews and project artifacts.</td>
<td>PBL was found to offer flexibility in allowing for the expression of individual differences and preferences in project development. Some multiple intelligence domains were not employed in the completion of the projects. Students cited practical reasons.</td>
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<tr>
<td>Author</td>
<td>Year</td>
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<td>Grade</td>
<td>Study Type</td>
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<tr>
<td>Gultekin</td>
<td>2005</td>
<td>Turkey</td>
<td>5th</td>
<td>Quasi-Experimental, Qualitative</td>
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<td>Hertzog</td>
<td>2007</td>
<td>United States</td>
<td>1st</td>
<td>Qualitative</td>
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<tr>
<td>Mergendoller &amp; Maxwell</td>
<td>2006</td>
<td>United States</td>
<td>12th</td>
<td>Qualitative</td>
</tr>
<tr>
<td>Mioduser &amp; Betzer</td>
<td>2007</td>
<td>Israel</td>
<td>11th-12th</td>
<td>Quasi-Experimental</td>
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</table>
Discussion

Examination of the included studies yielded a number of areas of interest. These areas include comparisons to traditional lecture-based instruction, effect on student attitudes and self-perception, developmental effects, effects on diverse learners, teacher attributes, and the overall quality of the identified research studies.

Overall Quality of the Research

Given the constructivist theoretical underpinnings of project-based instruction, it is perhaps not surprising that only a third of the identified studies offered comparative data as a major component (Alacapinar, 2008; Aral, Kandir, Ayhan, Yasar, 2010; Bickaki & Gursoy, 2010; Fillipatou & Govaris, 2011; Geier, et al., 2008), and a handful of other studies some lesser degree of comparative analysis (Faris, 2008; Krajcik, Neill & Reiser, 2007; Mergendoller & Maxwell, 2006; Tal & Krajcik, 2006). The remaining studies, comprising a majority of those identified, provided information that was more descriptive and qualitative in nature. It is interesting to note that most of the quantitative, comparative, studies originated outside the United States (Alacapinar, 2008; Aral, Kandir, Ayhan, Yasar, 2010; Bicaki & Gursoy, 2010; Faris, 2008; Gultekin, 2005; Kaldi, Fillipatou & Govaris, 2011), raising the possibility that the predominance of qualitative studies is a result of this review’s self-restriction to studies published in English. The multi-national nature of this grouping of studies posed additional challenges due to ambiguous translations, and internal reference to citations that were not available in English, for clarification.

Project-Based Learning and Traditional Lecture-Based Instruction

Although descriptive studies of project-based learning provide important information on participant perspective and experience, studies that compare project-based learning to traditional instruction offer factual insight into the relative value of project-based instruction as a means of reaching student mastery of curricular content and process skills. Overall, comparative studies identified for this review found project-based learning to be an effective means of teaching both content information and related skills. Students in project-based classrooms exhibited greater gains in content knowledge than their traditionally taught peers (Baumgartner & Zabin, 2008; Duncan & Tseng, 2010; Geier, et al., 2008; Gultekin, 2005; Kaldi, Fillipatou & Govaris, 2011; Mergendoller & Maxwell, 2006; Mioduser & Betzer, 2007; Tal, Krajcik & Blumenfeld, 2006). Gains were also higher in the areas of process and group skill development and information literacy skills when compared to lecture-based classrooms (Baumgartner & Zabin, 2008; Cheng, Lam & Chan, 2008; Chu, Tse & Chow, 2011; Kaldi, Fillipatou & Diamanto, 2011; Mergendoller & Maxwell, 2006; Mioduser & Betzer, 2007).
Effects on Student Attitudes and Self Perception
Many of the qualitative studies in this review sought to illuminate student reactions to participation in project-based instruction, and to create a window to some of the less-tangible effects of learning through projects. In all studies where student attitude was examined, project-based learning was perceived positively by participants, and described as fostering greater engagement with the subject matter. Students reported enjoying the active, hands-on approach to content, as well as improved perceptions of the subject matter. (Barron, et al., 1998; Baumgartner & Zabin, 2008; Beneke & Ostrosky, 2008; Blumenfeld, et al., 1991; Chu, Tse, & Chow, 2011; Faris, 2008; Hertzog, 2007; Hmelo-Silver, Duncan, & Chinn, 2007).

Developmental Effects
Two studies focused upon the comparative effects of project-based instruction versus traditional instruction on early concept development in preschool children (Aral, Kandir, Ayhan & Yasir, 2010; Bicakci & Gursoy, 2010). While the sample sizes for each study were relatively small, in both cases, project-based instruction was found to result in greater developmental growth in language and concept development than traditional instruction.

Effects on Varied Learners
Several studies looked at the effects of project-based learning on categories of learners or learner characteristics that are associated with school failure in traditional classroom situations. Beneke and Ostrosky (2008) examined teacher perceptions of how project-based instruction affected diverse learners in seven preschool classrooms. Teachers reported that the real-world focus of the projects allowed students who did not generally shine in academic discussions to share their knowledge about subject-matter that was familiar and accessible. Teachers in this study also reported a reduced need for disciplinary actions during project-based study, citing increased student engagement as the chief reason. Additionally, several studies indicated that the beneficial academic effects of project-based instruction were most pronounced for middle- to low-achieving students (Mergendoller & Maxwell, 2006; Tal, Krajcik and Blumenfeld, 2006).

Teacher and Setting Attributes
A number of researchers focused on identifying the specific teacher skills, expectations, and other attributes that might be contributing to the success of project-based instruction. Duncan and Tseng (2010) found that good classroom management skills, solid content knowledge, the ability to set clear learning goals, the ability to anticipate difficulties, willingness to support students on an as-needed basis, an understanding of individual differences, and a positive and encouraging approach to interactions with students were all important. Consisting predominantly of skills already known to enhance student achievement regardless of educational setting or specific teaching methodology, this list raises the possibility that much of the success in project-based learning is not due to the core values or practices unique to student-centered instruction, but rather that teachers simultaneously implement a variety of evidence-based practices – in other words, that good teaching transcends methodology.

The fact that project-based instruction requires multiple and fundamental shifts in classroom practices is highlighted by teachers’ reactions to it. Across a number of studies, teachers expressed reservations about putting project-based instruction into place because of the changes it required in the way they taught, the materials and resources they offered, and in the way they prepared and planned for instruction. Both Beneke & Ostrosky (2008) and Hertzog (2007) cited teacher resistance as a limiting factor in student success and overall effectiveness of project-based instruction; similarly, Mergendoller and Maxwell (2006) found that teacher expectations regarding the potential of project work and teacher
views of student abilities and limitations were directly connected to student learning outcomes, and concluded that not all teachers might be well-suited to project-based instruction. Hertzog (2007) recommended that professional development occur over an extended period with follow-up and mentoring to facilitate success for both teachers and students.

While it is tempting to blame teachers who are reluctant to adopt project-based instruction, it is important to note that such teachers may be reacting to genuine factors in their schools or setting that can make adoption of new teaching methodologies genuinely difficult. In an educational system that seems chronically short of personnel and funds, little is known about the cost of pursuing a project-based approach in terms of time, resources, balance with other school and system demands, teacher workload, and the interaction between project-based instruction and other requirements, such as teaching to standardized tests, that are placed on educators. As in many areas of educational achievement, systems variables have their own effects. Ravitz (2007) surveyed teachers from a variety of high schools that were using project-based approaches. Not surprisingly, achievement was higher in schools where the systems and policies aligned with project-based ideals were higher. The optimal application of project-based instruction requires change not only in the classroom, but at school and system levels to optimize effectiveness (Barron, et al., 1998; Blumenfeld, et al., 1991; Duncan and Tseng, 2010; Geier, et al., 2008; Ravitz, 2007).

It is notable that nearly all the project-based instruction in a single content area reported in these studies occurred in the content areas of social studies or science. Given that the first application of problem-based instruction as a classroom teaching tool originated in the medical sciences (Knoll, 1997), the continuing connection with science is not surprising. In regard to social studies, one can speculate that it offers a flexibility to choose topics and themes which are easily adapted for project work, as opposed to subject areas that are more systematically introduced and might require a somewhat different approach in order to develop successful project-based activities.

Conclusion

Overall, studies conducted over the last ten years confirm earlier, generally positive findings (Thomas, 2000; Barron, et al., 1998) regarding the efficacy of project-based instruction. Project-based instruction in prekindergarten through 12th grade has yielded improved content learning, higher levels of engagement and more positive perceptions of the subject matter. With such a clear research base in support of its effectiveness, project-based methods appear to offer the possibility of success both overall and to a broader range of students than traditional lecture-based instruction.

Research clearly indicates that project-based learning is beneficial, with positive outcomes including increases in level of student engagement, heightened interest in content, more robust development of problem-solving strategies, and greater depth of learning and transfer of skills to new situations (Hmelo-Silver, 2007; Thomas, 2000; Barron, et al., 1998). With renewed emphasis being placed on the basics of education, and increasing pressure to streamline instruction and teach to specific standards, the idea that the most effective instruction for these goals is also one that fosters depth of learning and engages students on a personal level is quite appealing.

In order to retain the beneficial aspects of project-based instruction and avoid the confusion that occurred in the mid 20th century when increasing numbers of theorists promoted related methodologies, but failed to prescribe adequate practical information to support successful long-term practice (e.g., Mayer in 2008), research that seeks to clearly distinguish between effective and ineffective elements of project-based instruction should continue. Areas in particular need of further exploration include how
and when project-based instruction is most appropriate, how school structures and policies might be adjusted to best support teachers and learners, and how to maintain content integrity and meet federal and state learning standards while incorporating the authenticity of real-world issues and ideas.

Project-based methodology offers highly desirable benefits, yet implementation poses some practical difficulties within the current context of American classrooms. What is needed is a realistic approach that encourages teachers to incorporate successful, proven elements of project-based learning into classroom practice. Researchers should continue to refine understanding and respond to the practical challenges of this teaching method.

Acknowledgement

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References

References marked with an asterisk are those included in the research literature review.


LITERATURE REVIEW ON THE EFFECTIVENESS OF PROJECT BASED LEARNING


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A literature review is a study involving scholarly material with the aim to discuss published information about a topic or research question. Just like in a thesis, for example, it is expected that you have an introduction giving the general idea of the central topic and organizational pattern a body which contains the actual discussion of the sources and finally the conclusion or recommendations where you bring forward whatever you have drawn from the reviewed literature. The conclusion may even suggest there are no agreeable findings and that the discussion should be continued. Why are literature reviews important? Literature reviews constantly feed new research, that constantly fed literature reviews and we could go on. A literature review is a survey of scholarly sources on a specific topic. It provides an overview of current knowledge, allowing you to identify relevant theories, methods, and gaps in the existing research. Writing a literature review involves finding relevant publications (such as books and journal articles), critically analyzing them, and explaining what you found. You should be able to answer it based only on a review of existing publications.

Research question example. What is the impact of social media on body image among Generation Z? This literature review was commissioned by the Scottish Government to explore how the use of digital technology for learning and teaching can support teachers, parents, children and young people in improving outcomes and achieving our ambitions for education in Scotland. Approach. Assessment is based on: Experience of evaluating policy actions in education and training. Randomised control trials and empirical studies establishing an appropriate comparative situation where a policy measure has not been. There are a few meta-reviews and meta-analyses of the literature that have examined the conclusions reached by a large body of similar research on digital learning and teaching in specific contexts. In writing a literature review the works, opinions, and the findings of all of those other authors should be incorporated into a separated topic by topic, compared, and critically analyzed together. Literature reviews should be concise. Every point, argument, and topic in your work should be coupled with a review of literature in relation to it. Literature review should not include any topics that are not related to your main thesis. To further check on other tips and guides, here is one literature review writing guide to help you make that coherent synthesis for your work.