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Literature Review

Making Learning Relevant: Real-World Connections and High School Engagement

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Abstract

This literature review examines how connecting high school instruction to real-world, functional experiences influence student motivation and engagement. It pulls together research on project-, problem-, and case-based learning, hands-on experiential learning models, collaborative cross-subject projects, and students' perceptions of relevance. Overall, studies show that when students participate in meaningful, authentic tasks, they tend to be more motivated, stay engaged longer, and often perform better. Hands-on approaches like Kolb's cycle and the 5E model support this by guiding students through exploration, reflection, and real application skills. Research also shows that collaborative, real-world projects help students stay invested both academically and socially. Across the literature, one theme is clear: when students believe their schoolwork is useful and connected to their lives, their interests, persistence, and overall engagement increases.

Keywords: vitality, motivation, engagement, relevance, general education, experiential learning, instructional design

Making Learning Relevant: Real-World Connections and High School Engagement

In many high school classrooms, students struggle to see how academic content connects to their everyday lives or future goals. This lack of perceived relevance often contributes to low motivation, inconsistent engagement, and a sense that schoolwork exists mainly for grades rather than meaningful learning. As expectations increase in secondary settings, teachers are increasingly concerned with finding ways to make instruction feel authentic and purposeful for the students they serve.

The focus of this literature review- how connecting classroom instruction to real-world, functional experiences impacts motivation and engagement- emerged from this challenge. Contemporary learning theory consistently shows that when students understand why content matters and can apply it in practical ways, they are more willing to invest effort, participate, and persist through difficulty. This issue is especially important for high school learners who are developing a sense of identity, autonomy, and future direction.

Research highlights several converging themes related to real-world learning: the benefits of experiential and hands on activities, the structure and engagement supported by models like the 5E instructional cycle, the value of collaborative interdisciplinary projects, and the central role of perceived relevance in shaping student motivation. Together, these perspectives suggest that authentic learning experiences are not just beneficial. They may be essential for sustaining motivation in general education settings.

This literature review explores these ideas to better understand how real-world connections in instruction influence high school students' motivation and engagement, and how teachers can intentionally design learning experiences that feel meaningful and relevant.

Problem-Based, Project-Based, and Case-Based Learning

Student centered instructional approaches that engage learners in solving authentic, real-world problems have gained increasing attention as educators search for ways to promote deeper, more meaningful learning and sustain motivation. Across the research, problem-based learning, project-based learning, and case-based learning share core characteristics: individuals work collaboratively, apply knowledge to

realistic situations, and take greater responsibility over the learning process. These elements stand in contrast to more traditional, lecture driven models in which students passively receive information. Two recent meta-analyses, Wijnia et al. (2024) and Zhang and Ma (2023), provide substantial empirical evidence demonstrating the cognitive, motivational, and affective benefits of these approaches across various grade levels and academic disciplines.

Wijnia et al. (2024) synthesized findings from 132 studies to examine how problem-, project-, and case-based instruction impacts student motivation. The authors found that, overall, these approaches produced a small to moderately positive effect on motivation when compared to traditional instruction. Although the effect sizes appear small, the implications for classroom practice are meaningful, especially for teachers who work daily to maintain student engagement. Motivation is often influenced by factors beyond academic content, such as relevance, autonomy, and students perceived competence, and the meta-analysis suggests that student centered instructional models naturally support these motivational components. What is especially noteworthy is that the strongest improvements were those found in students' values, attitudes, and beliefs toward learning. These are areas that often shift when students feel that instruction has real world applications and value. When content feels practical, relatable, or connected to students lived experiences, they are more likely to see purpose in what they are learning, which can ultimately improve persistence and engagement.

One particularly interesting finding from Wijnia et al. (2024) is that motivation outcomes did not significantly differ across the three instructional formats. Problem-based, project-based, and case-based learning all yielded roughly comparable benefits. This suggests that it is not the specific instructional label or structure that matters most, but rather the presence of authentic problems, student collaboration, and opportunities for applied learning. For educators, this finding offers flexibility. It means that a short case scenario built around a real world decision can be just as motivating as a longer project, as long as students are actively engaged in meaningful problem solving. Educators can adapt the general principles of authenticity and inquiry to match their content area, time constraints, or student needs. This flexibility is particularly helpful in secondary settings, where time and curriculum pacing often limit the feasibility of utilizing extended projects.

While Wijnia et al. (2024) focus primarily on motivation, Zhang and Ma (2023) extend the conversation by examining cognitive and affective outcomes associated with project-based learning. Their meta-analysis included 66 experimental studies and extracted 190 effect sizes to evaluate how project-based learning influences academic achievement, thinking skills, and student attitudes. They reported a moderately positive overall effect, with academic achievement showing the strongest gains. In other words, project-based learning is not only motivating but also academically effective. Students who engage in hands-on, applied tasks appear to deepen their understanding and retain content more effectively than peers in traditional classrooms. This is consistent with theories of constructivism, which highlight the learning benefits that arise when students actively build knowledge through exploration and problem solving.

Zhang and Ma (2023) also identified several moderating factors that influence the effectiveness of project-based learning. Variables such as geographic region, subject area, class size, group size, course type, and duration of the instructional intervention all shaped learning outcomes. For classroom teachers, these findings offer valuable guidance. For example, smaller groups tended to yield stronger results, likely because they allow each student to take meaningful responsibility within the project. Additionally, interventions lasting ten to fifteen weeks were associated with more substantial gains, suggesting that students benefit from sustained engagement with a project rather than brief or isolated activities. These insights point to the importance of careful instructional design when implementing project-based learning. Structuring projects thoughtfully, ensuring they are long enough to be meaningful but manageable in scope, can significantly improve both motivation and academic performance.

Together, these two meta-analyses provide strong empirical support for instructional approaches that ask students to work on complex, authentic tasks. Whether the learning experience is framed as a problem to solve, a project to complete, or a case to analyze, the underlying emphasis on real world relevance appears to energize students' attitudes and enhance their understanding. For high school teachers in particular, the findings underscore the value of designing instruction that helps students apply academic content to

practical, meaningful situations. This is especially important for students preparing to transition into adult roles and postsecondary environments, where problem solving, collaboration, and self-directed learning are critical.

Overall, the research demonstrates that problem-based, project-based, and case-based approaches can play a powerful role in promoting both engagement and achievement. By rounding instruction in authentic experiences, teachers can help students make meaningful connections between academic content and the real world, ultimately fostering deeper learning and a stronger sense of purpose.

Experiential Learning and the 5E Model

Experiential learning frameworks offer a powerful foundation for instructional design that prioritizes authentic engagement, student autonomy, and real-world application. Unlike traditional lecture driven instructions that positions students as passive recipients of information, experiential approaches emphasize learning through doing, reflecting, and applying knowledge within meaningful contexts. At the core of experiential learning is the belief that students build deeper, more meaningful understanding when they actively interact with concepts and see their relevance beyond the classroom. Two prominent perspectives in the literature, Kolb's experiential learning cycle and the 5E instructional model, both emphasize the importance of authentic tasks, reflection, and real-world application that give knowledge meaning. The research by Kong (2021) and Jeter et al. (2019) provides substantial support for the motivational and engagement benefits of these experiential approaches, particularly for high school students who often struggle to find personal relevance in academic content.

Kong (2021) offers a conceptual review grounded in constructivist theory and Kolb's experiential learning cycle, which includes concrete experience, reflective observation, abstract conceptualization, and active experimentation. In this cyclical model, students do not simply perform tasks. Instead, they participate in a process where hands-on activity leads to thoughtful reflection, conceptual understanding, and transfer to new contexts. According to Kong, this cycle is a key driver of motivation because it enables students to experience learning as personally meaningful. When learners observe how classroom tasks connect to their lived experiences, they develop stronger ownership of the learning process. For example, a mathematics unit on budgeting may feel disconnected when confined to textbook scenarios, but when framed as planning a school event or managing personal expenses, students recognize its practical relevance. The sense of ownership that follows increases students' intrinsic motivation and willingness to persist through challenges.

A central point emphasized in Kong's (2021) review is the interconnected nature of motivation and engagement. Motivation encompasses internal variables such as interest, self-efficacy, and perceived value, whereas engagement reflects observable behaviors like participation, focus, and persistence. Experiential learning enhances both dimensions simultaneously. When students believe that a task matters and aligns with their goals or experiences, their engagement naturally increases. They participate more actively, put forth greater effort, and develop stronger academic attitudes. Kong's argument suggests that experiential learning activates motivational systems by linking content to authentic, functional experiences, an insight that aligns closely with the broader aims of designing real world instruction in secondary classrooms.

From the perspective of classroom practice, the implications are clear: teaching strategies that incorporate lived experiences, community contexts, and hands on exploration can shift students' motivational beliefs even if these shifts are subtle rather than dramatic. For high school students, who often question the relevance of academic material, experiential learning can serve as a mechanism for restoring meaning. By connecting instructional content to tangible applications, educators help students see value in learning beyond assignments and grading. Thus, the conceptual framework provided by Kong helps justify the role of experiential learning within a literature review focused on functional, real-world instruction.

While Kong's work offers a theoretical foundation, Jeter et al. (2019) provide empirical support for experiential instruction through their examination of the 5E instructional model in high school English language arts classrooms. The 5E model (engage, explore, explain, elaborate, evaluate) is a structured approach designed to guide students through cycles of curiosity, investigation, reflection, application, and assessment. Similar to Kolb's cycle, the 5E framework positions students as active participants who

construct understanding through authentic experiences. Jeter and colleagues argue that this model supports motivation and engagement because it emphasizes purposeful learning tasks that connect classroom instruction to real world contexts.

The authors describe several examples of authentic learning experiences implemented through the 5E model. These include analyzing community issues, composing persuasive texts for real audiences, and collaborating on service-oriented or problem-focused projects. Such tasks require students to think critically, engage with broader societal concerns, and communicate effectively. In this way, the 5E model not only deepens content understanding but also helps students see themselves as contributors in their community. This sense of relevance and civic purpose serves as a strong motivational driver, particularly for adolescents who value autonomy and real-world impact.

Another important insight from Jeter et al. (2019) is the role of student agency within the 5E framework. Because the model begins with engagement and exploration, students initiate learning through curiosity and discovery rather than passive reception. This mirrors experiential learning principles that highlight the importance of student autonomy and inquiry. By allowing students to pose questions, investigate issues, and form their own interpretations before formal explanation, the 5E model positions learners as collaborative constructors of knowledge. This student-centered positioning increases motivation, as learners feel more control and ownership over the process. It also strengthens engagement by fostering active participation rather than passive compliance.

This study further highlights the social dimensions of experiential and 5E based instruction. Collaborative activities embedded within authentic tasks encourage peer interaction, discussion, and joint problem solving. Such social components reinforce engagement by creating a sense of community and shared purpose. For high school students, who are usually developmentally primed for social connection, this collaborative aspect is especially valuable. It both supports academic engagement and helps students develop interpersonal skills such as communication, negotiation, and empathy.

Observed together, Kong (2021) and Jeter et al. (2019) offer complementary perspectives that reinforce the value of experiential learning and the 5E instructional model for enhancing motivation and engagement. Kong provides the theoretical rationale grounded in constructivist learning and Kolb's experiential cycle, emphasizing how hands on, reflective, real-world activities strengthen both motivational beliefs and engaged behaviors. Jeter and colleagues provide applied evidence of how a structured experiential model (the 5E framework) translates these theoretical principles into classroom practice through authentic, student-centered experiences.

For high school educators, these findings support the deliberate integration of experiential learning principles into instructional design. Whether through Kolb’s cycle or the 5E model, the underlying goal remains consistent: to create learning experiences that feel meaningful, functional, and connected to students’ lives beyond the classroom. When students see how academic content applies to real world challenges, their motivation increases, their engagement deepens, and their learning becomes more robust. This aligns directly with the broader purpose of this review, which emphasizes bridging academic concepts with lived experiences to support student motivation and engagement.

Collaborative, Interdisciplinary Projects

Collaborative, interdisciplinary projects provide a structured and highly effective way to engage students in authentic, real-world problem solving while simultaneously promoting cognitive, social, and emotional development. Mebert et al. (2020) examined this approach in higher education settings, investigating how students from multiple academic programs collaborated to address complex, real world challenges that required integrating knowledge across disciplines. The study demonstrated that students participating in these projects exhibited higher levels of motivation, engagement, and persistence compared to peers engaged in traditional, lecture-based, or isolated assignments. These findings reinforce the notion that learning experiences are most impactful when students perceive them as meaningful and relevant, rather than purely abstract exercises.

The research highlights several key mechanisms by which collaborative, interdisciplinary projects enhance motivation and engagement. First, students must navigate real life complexities that mirror challenges outside of the classroom. This requires communication, negotiation of responsibilities, and

integration of diverse perspectives, which are skills that are highly relevant to adult and professional life. Engaging in such tasks fosters cognitive engagement because students are challenged to synthesize information, apply concepts, and develop creative solutions. At the same time, these experiences support social-emotional engagement by cultivating a sense of community, shared purpose, and accountability. Students who see the tangible impact of their work and who feel connected to their peers often demonstrate greater persistence, enthusiasm, in investment in learning.

For high school classrooms, the implications are clear. While Mebert et al. (2020) focused on higher education, the principles translate well to secondary settings. Teachers can design scaled down, interdisciplinary projects that connect different subject areas or address local community needs. For example, a project could involve students using mathematics and science to design sustainable solutions for a school garden or collaborating across English and social studies to develop a community awareness campaign. Even when projects are smaller in scale, the combination of real-world relevance and collaboration can significantly enhance both motivation and engagement. These tasks encourage students to see themselves as capable problem solvers whose work has value beyond grades and assignments.

Another significant finding from Mebert et al. (2020) is the role of reflection and scaffolding in maximizing engagement. Students reported that their motivation and involvement increased when faculty guided them in connecting project tasks to broader learning objectives. This guidance helped students recognize the practical value of their work, reinforcing the link between academic content and authentic outcomes. In practice, this suggests that educators should not only design collaborative projects but also provide structured support throughout the process. Strategies such as setting clear goals, offering periodic check-ins, and facilitating reflective discussions help students understand the purpose behind the work and internalize its relevance, which further boosts engagement.

Additionally, collaborative projects develop critical interpersonal skills that are often overlooked in traditional instruction. Working in teams encourages students to negotiate differing viewpoints, practice empathy, and coordinate tasks efficiently. These experiences mirror real world professionals' environments, providing students with early exposure to the collaborative problem solving and communication skills necessary in both postsecondary education and the workforce. Integrating the social components into academic projects helps create a more holistic learning experience where motivation is sustained not only by interest in the content but also by connecting to peers and the community.

Overall, Mebert et al. (2020) provide compelling evidence that collaborative, interdisciplinary projects are effective tools for enhancing student motivation and engagement. By creating authentic, real-world tasks that require application of knowledge, interpersonal collaboration, and reflective thinking, educators can offer learning experiences that are both meaningful and developmentally rich. In high school contexts, even modest adaptations of this approach can significantly increase students' investment in learning. The study reinforces a central theme of this literature review: students are most engaged and motivated when classroom instruction is explicitly tied to purposeful, functional experiences that prepare them for life beyond school, fostering both competence and confidence in their abilities.

Relevance as a Key Driver of Motivation

A substantial body of motivational research highlights relevance as one of the most powerful levers educators can use to influence student engagement, persistence, and overall investment in learning. Across theoretical frameworks, including expectancy value theory, self-determination theory, and ecological perspectives on engagement, students' perceptions of the usefulness, meaningfulness, or personal applicability of academic content consistently emerge as central determinants of their motivation. When students understand why a task matters, how it connects to their goals, or how it prepares them for real world situations, they are far more likely to participate actively, take risks, and sustain attention during learning activities. The studies reviewed in this section- Cooper et al. (2017), Li and Xue (2023), and Johansen et al. (2023)- provide converging evidence that perceived relevance influences students' cognitive, emotional, and behavioral engagement. Collectively, these findings strengthen the argument that relevance is not an optional enhancement to instruction but a foundational driver of motivation in both higher education and secondary settings.

Cooper, Ashley, and Brownell (2017) approached relevance through the lens of expectancy-value theory (EVT), which asserts that students' motivation is shaped by their expectation of success and the value they assign to a task. In their study on reducing student resistance to active learning, the authors examined whether explicitly emphasizing the utility and purpose of learning activities could enhance engagement. Many students initially pushed back against active learning because they did not understand why certain tasks, such as collaborative problem solving or in class applications, were necessary when more passive methods might seem easier. By making the relevance of activities explicit, the instructors reduced this resistance and increased both participation and enthusiasm for active learning methods. Students' willingness to engage improved when they perceived that the activities had real world applications or prepared them for future academic or professional experiences.

From an instructional perspective, Cooper et al. (2017) demonstrate that relevance must be clearly communicated rather than assumed. Educators often understand how classroom tasks connect to broader skills, but students can struggle to see these connections independently. The researchers showed that when teachers intentionally frame activities around their practical value, explaining how a scientific modeling activity mirrors real research practices or how analyzing data prepares students for real decision making, students' motivation improves. This finding is especially important for secondary teachers, where student resistance often stems from the belief that school tasks lack purpose. By breaking down the "why" behind instructional choices, teachers can boost both students' expectancy for success and their perception of the value of learning tasks, ultimately enhancing engagement.

Li and Xue's (2023) meta-analysis expands this idea by situating relevance within a broader environmental understanding of student engagement. Analyzing 93 studies across the previous decade, they found strong evidence that perceived usefulness and authenticity of content are among the most powerful predictors of engagement across cognitive, emotional, and behavioral dimensions. Their findings suggest that relevance does not operate in isolation but interacts with other environmental factors such as instructional design, student-teacher relationships, and classroom climate. In particular, Li and Xue emphasize that engagement is dynamic and reciprocal: students are more engaged when they perceive tasks as meaningful, and higher engagement enhances their ability to find further relevance in classroom content.

One of the most compelling contributions from Li and Xue (2023) is the statement that relevance both reflects and shapes the learning environment. When instructional activities are tied to real world situations, such as solving community problems, using mathematics for budgeting scenarios, or applying scientific concepts to environmental issues, students demonstrate deeper cognitive engagement and greater persistence. This supports the idea that relevance functions as a motivational anchor that helps students make sense of abstract or challenging content. The meta-analysis also highlights the importance of autonomy and collaboration in fostering relevance. Students are more likely to find content meaningful when they can explore it through hands on activities, collaborative work, or opportunities for choice, indicating that relevance is not simply about content but also about how students interact with it. For high school teachers, this can reinforce the value of designing learning experiences that integrate application, student voice, and personal connection.

Johansen, Eliassen, and Jeno (2023) offer a complementary perspective by examining how content relevance enhances not only motivation but also students' sense of vitality. Grounded in self-determination theory, their research shows that when students perceive learning tasks as personally meaningful, they experience increases in autonomous motivation and subjective vitality. Their experimental study demonstrated that students who were provided with explicit connections between content and their own goals, interests, or lived experiences reported significantly higher engagement and enthusiasm for the material.

This emphasis on vitality adds an important emotional dimension to the relevance of the literature. When EVT focuses on expectancy and value, and environmental engagement frameworks highlight behavioral patterns, self-determination theory draws attention to the way relevance satisfies students psychological needs for autonomy, competence, and relatedness. Johansen et al. (2023) showed that when students understand why content matters to them personally, they feel more autonomous, more competent, and more connected. These psychological needs are deeply intertwined with intrinsic motivation, suggesting

that relevance is not only a cognitive judgement but also an emotional and motivational catalyst.

Johansen et al.'s findings resonate strongly with the experiences of many secondary educators. High school students frequently ask, "Why do we need to know this?" When that question goes unanswered, motivation is lost, and fast. But when teachers intentionally design lessons around students' interests, community issues, or future pathways, they help students internalize the value of learning. The study's emphasis on explicit relevance, rather than assumed relevance, underscores the need for teachers to articulate connections clearly, making the purpose of content visible and meaningful.

Taken together, these three studies reinforce that relevance is one of the most powerful influences on student motivation. Cooper et al. (2017) highlight that relevance increases task value and reduces resistance by helping students understand why learning activities matter. Li and Xue (2023) show that relevance operates within a dynamic system, where meaningful learning environments promote deeper engagement and, in turn, help students extract more value from the content. Johansen et al. (2023) add that relevance increases students' sense of vitality. Across all three perspectives, the central message is consistent: students participate more willingly and persist longer when instruction feels purposeful and connected to real life.

For high school teachers, these findings highlight the importance of designing instruction that makes relevance explicit rather than assuming students will naturally see the connection. Even brief explanations of how a lesson can tie to real world situations, future goals, or everyday situations can significantly increase motivation. This is especially important for adolescents who frequently question the purpose of academic tasks. When teachers articulate relevance clearly, students are more likely to engage cognitively and emotionally.

The studies also emphasize that relevance is strengthened within supportive learning environments. Li and Xue's meta-analysis shows that engagement grows when students feel valued, supported, and able to collaborate. This means that relevance is shaped not only by instructional design but also by classroom climate and student-teacher relationships. When students feel respected and heard, they interpret content as more meaningful and are more willing to invest effort.

In summary, the research across these three studies demonstrates that relevance is a foundational driver of student motivation. Whether through clarity of purpose, opportunities for real world application, or a supportive environment, relevance helps students understand why learning matters. For high school educators, intentionally embedding relevance into instruction is an effective way to boost engagement, persistence, and meaningful learning, supporting the broader argument of this review that functional, real-world connections are central to student motivation.

Summary and Conclusion

Across the literature, a consistent message emerges: when learning feels meaningful, students are far more likely to engage with it. Problem-, project-, and case-based learning models demonstrate that hands-on, authentic tasks promote critical thinking, collaboration, and persistence by situating knowledge within real-world contexts. Experiential approaches such as the 5E instructional model further support engagement by structuring learning around exploration, sense making, and application, which are steps that enable students to anchor new ideas in concrete experience. Collaborative, interdisciplinary projects extend these benefits by giving students opportunities to connect academic content across subjects and engage in work that mirrors real professional and social problem solving.

Most compelling, however, is the body of research emphasizing perceived relevance as a core driver of student motivation. When students understand why learning matters to them, they experience greater autonomy, vitality, and willingness to engage. This suggests that relevance is not an optional feature of effective instruction but a necessary condition for sustained motivation in the modern high school classroom.

For educators, the implications are clear. Designing instruction that intentionally bridges classroom content with real-world, functional applications is a powerful way to foster deeper motivation and engagement. Whether through authentic tasks, interdisciplinary collaboration, or explicit relevance-building strategies, teachers can create learning experiences that feel purposeful rather than abstract. As

schools increasingly aim to prepare students for their futures, the ability to make learning meaningful may be one of the most important practices teachers can cultivate.

Together, the research reviewed here reinforces that real-world relevance is not only beneficial, but also foundational to helping high school students stay engaged, see value in their world, and develop the motivation needed for lifelong learning.

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