Organizing and Curating an Accessible and Reliable **AP® Physics 1 Course**

The Value of Foundational, Hybrid Course Materials

bfw publishers

Table of Contents

Introduction: Online and Distance Education at the Secondary Level

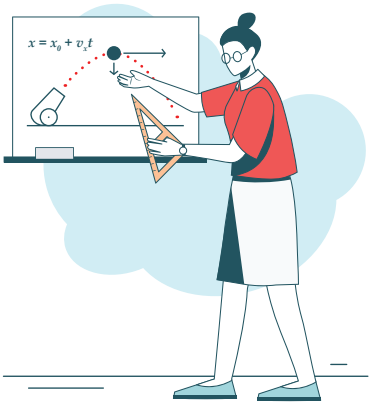
While the emergence of the COVID-19 pandemic caused major disruptions to education worldwide, it also accentuated the importance, even necessity, of non-traditional, online modes of learning. In many ways, this palpable shift to remote learning environments was not entirely new to the world of education. In fact, the increasing role of technology in classrooms and materials, such as digital textbooks, virtual workspaces, and online homework assignments, have made their way into mainstream education as early as the 1990s.[1] Since then, educators and administrators at the elementary, secondary, and postsecondary levels have pursued pedagogical innovation by emerging online technologies that aim to facilitate and simplify the convergence of in-person and online learning.

As the demand for online resources continues to increase, so too do the anxieties of teachers, and, in this case, the apprehension of secondary school teachers. Today's high school educators are faced with a number of intensifying worries: the varying quality of online learning materials, the substantial shifts in student learning but also in teaching organization, student progress, performance tracking, *and* ensuring accessible and equitable learning environments. The very structure of secondary education has changed.[2] These challenges, now seemingly universal, hold true for high school educators across the country, including AP® Physics 1 instructors. How then, can we provide topical solutions to such challenges for AP® Physics 1 teachers? The answer lies in flexibility, collaboration, and innovation in providing effective and accessible learning foundations.

1 "Distance Education and the Evolution of Online Learning in the United States," University of Denver Sturm College of Law, 2015.

2 "Impact of the Coronavirus Pandemic on the Elementary and Secondary Education System," National Center for Education Statistics, 2021.

Teaching and Learning Trends in AP® Physics 1



According to the most recent data provided by National Center for Education Statistics (NCES), "the key indicators on the condition of education" in 2021 vary depending on school district, household income level, race, and the format of online classes.[3] Particularly interesting are the NCES findings that highlight that for students who come from various backgrounds of socioeconomic status, race, and (dis)ability, adjustments to instruction are often needed.[4] With issues ranging from access and bandwidth to high school enrollment and completion rates, many factors logically impact the learning and teaching of AP® Physics 1.

As a result, perhaps of challenging teaching and extraordinary learning conditions in 2021, 42% of students successfully passed the AP® Physics 1 exam—a 3% decrease from 2019.[5] In fact, many tactical skills included in the College Board's curriculum, such as "hands-on, inquiry-based laboratory" requirements, depend on accessible, equitable, and flexible instruction.[6] Altogether, there are complications in teaching AP® Physics 1 in a remote or hybrid environment, and many educators have naturally turned to a combination of online and textbook resources to address these challenges.

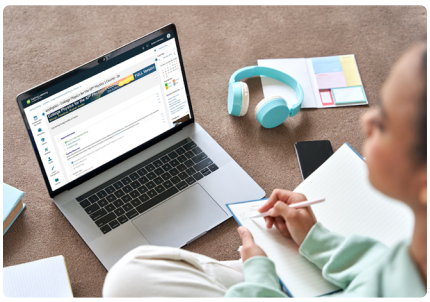
Recent research conducted by BFW Publishers found that the vast majority of research subjects are teaching AP® Physics 1 with notable textbooks such as those published by Macmillan, Pearson, or Wiley. This research also indicated that many teachers also use online resources to supplement online course materials. As such, it comes as no surprise that, findings concluded that 85% of educator respondents teach AP® Physics 1 with an accompanying digital platform with online homework options, e-books, etc.

This data reveals that in the past two years, the resources AP® Physics 1 teachers use often reflect their teaching environments; that is, those who teach in a hybrid environment, use a hybrid combination of available materials. Perhaps most compelling, however, is *how* these educators are using core textbook content and other various online resources.

3 "Report on the Condition of Education 2021," Institute of Education Sciences, 2021.
4 "Report on the Condition of Education 2021," Institute of Education Sciences, 2021.
5 "AP Physics 1 Exam: 2021 Results," The College Board, 2021.
6 "AP Physics 1: Algebra-based The Course," The College Board, 2022.

In addition to reporting the specific materials educators use, this data set determined major teacher/student pain points. Altogether, the factors and pain points that ranked the highest amongst respondents were as follows: course organization, cost of educational material, and a need for online/digital learning experiences. As has long been true, the findings of this research indicate that despite the popularity and pervasiveness of online resources, a need for *both* foundational, curated, core textbook content *and* accessible, digital, platforms and experiences exists. The challenge, however, is finding a solution that provides measurable outcomes for both modes of learning.

SaplingPlus and *College Physics for the AP® Physics 1 Course*, 2nd edition



While it is clear the textbook and core textbook content is the foundational material of teaching AP® Physics 1, the above findings illuminate the great value added by additional digital platforms, especially those which have the ability to facilitate course organization. Today, more than 130 school districts across the country (including some of the largest districts in the nation in cities such as Miami and Los Angeles) use the SaplingPlus digital platform for *College Physics for the AP® Physics 1 Course*, 2nd edition to offer their students a trusted digital and physical learning experience.

SaplingPlus is a standardizing, stabilizing product that streamlines AP® Physics 1 education to ensure that no matter how students study (delivery mode/receipt) the content is high-quality, accessible and dependable. The comprehensive AP® Physics 1 platform not only augments the expert-authored textbook, it also equips teachers to achieve adaptable, organized, and effective teaching methods and limits their need to supplement or reorganize course material.

Teacher Review of SaplingPlus and *College Physics for the AP® Physics 1 Course*, 2nd edition:

> "The material is treated to an appropriate breadth and depth with an eye towards the expectations of the College Board. Pointers for navigating the AP® exam are frequent and appropriate."
>
> — Linus Dolce, Saint Louis Priory School, MO

Key Features of SaplingPlus Platform:

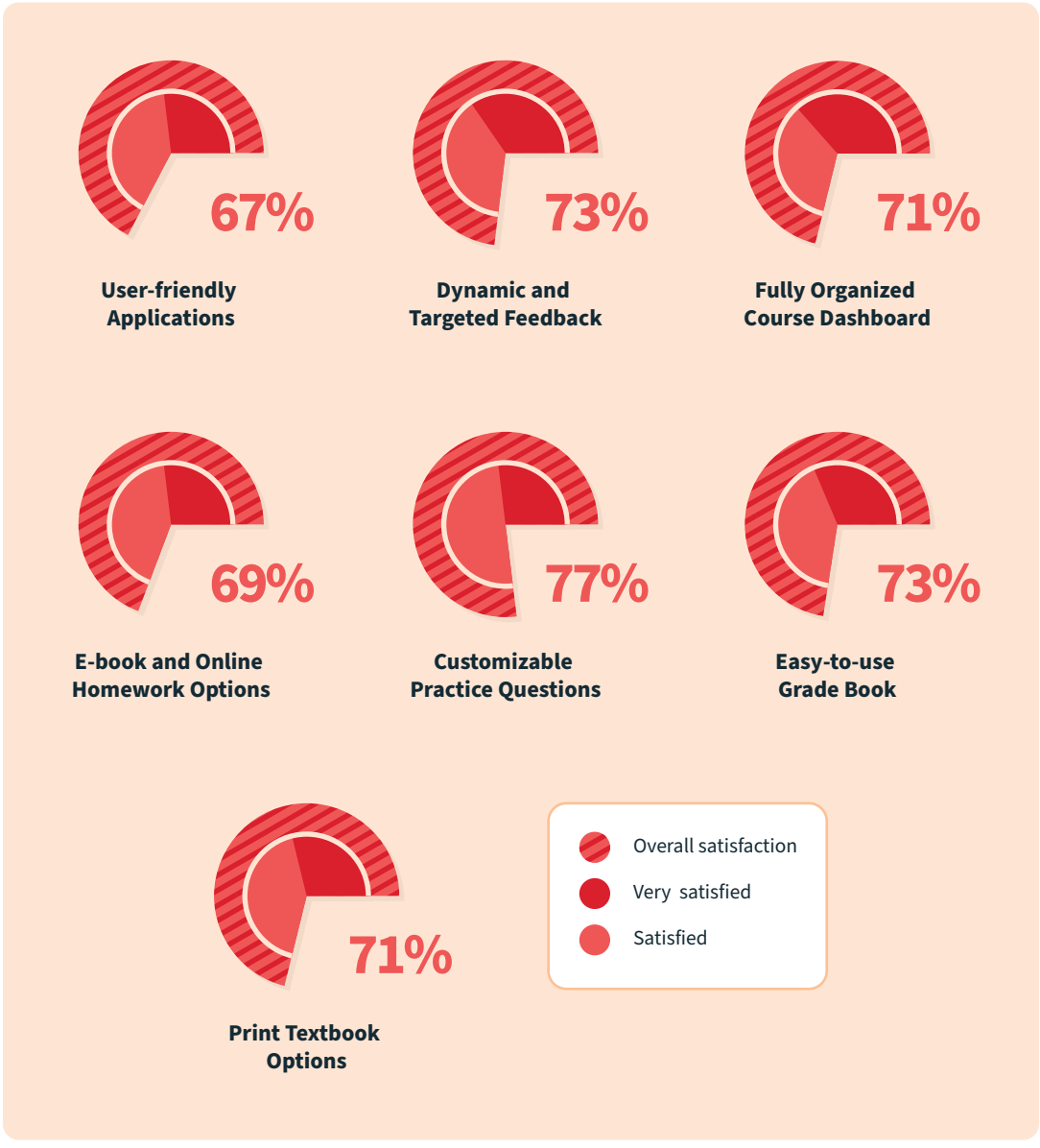
- **Dynamic and Targeted Feedback** in real-time
- More than **1,000 practice questions**
- **Fully organized course dashboard** allows you to easily manage and navigate through your course with embedded links for both the student and teacher resources
- **FlipIt Videos** - a class preparation system backed and proven to be effective by published research
- **E-book** is fully accessible on all devices both online and offline, as well as on mobile.
- An **easy-to-use gradebook** provides a clear window on performance for the whole class, for individual students, and individual assignments

SaplingPlus

84% of teachers say SaplingPlus helped their students improve their content knowledge.

75% of platform users are likely to recommend SaplingPlus for ***College Physics for the AP® Physics 1 Course***, 2nd edition to a colleague.

Overall satisfaction with the key features of SaplingPlus



Teacher Review of SaplingPlus and *College Physics for the AP® Physics 1 Course*, 2nd edition:

"Great figures and equations with enough practice to actually get ready for the AP® Exam."

— Charles Therriault, Newfound Regional High School, NH

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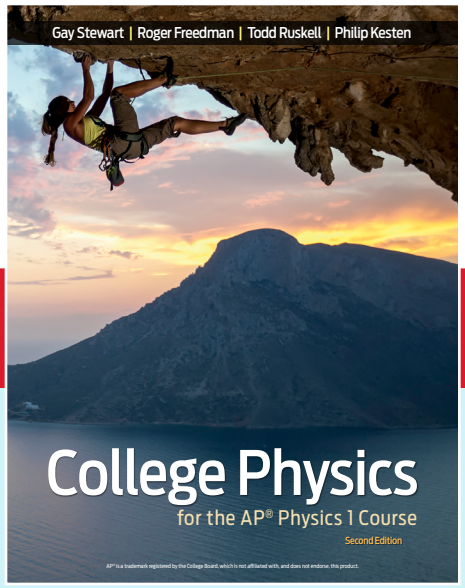
Conclusion

Ultimately, 84% of teachers say SaplingPlus helped their students improve their content knowledge. SaplingPlus and the accompanying *College Physics for the AP® Physics 1 Course*, 2nd edition textbook, specifically designed and written to facilitate educator adaptation, can reach the diverse and evolving needs of students as it accommodates the dynamic methods of teaching and learning for today's learners and educators. In the rise of a digital era where online resources are increasingly accessible, *and* at times unreliable, together SaplingPlus and *College Physics for the AP® Physics 1 Course*, 2nd edition can help educators reimagine and rethink education in a digital environment while still relying on trusted, curated, performance-driven resources. This opportunity to meet the demands for accessible, equitable, and organized learning materials is valuable, and the outcomes are measurable and transformative for AP®Physics 1 students and instructors alike.

Teacher Review of SaplingPlus and *College Physics for the AP® Physics 1 Course*, 2nd edition:

> "It breaks the material down into specific understandable chunks and is very intentional about preparing students for success on the AP® test."
>
> — Daniel Olthoff, Calvin Christian High School, MI



To learn more about SaplingPlus contact us.

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