This design case describes the development of a dual-credit hybrid health course for incoming first-year high school students seeking to earn college credit. I developed the hybrid health course from the Personal Health Management course I taught at the university level. During the process, I was communicating with the high school health co-instructor. This one-semester hybrid course allows high school students to learn about the many dimensions of wellness and comprehend concepts related to health promotion and disease prevention. In addition, students can view content online and in class, participate in discussion peer activities, complete weekly quizzes, and develop a personal health management plan. Upon completing the course, students earn 3-credit hours towards their college degree.

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INTRODUCTION

Dual credit courses are college courses taken for high school and college credit by students who have not yet received a high school diploma. "The rise of dual credit has benefited students, too. Research shows that students who take dual credit courses are more likely to enroll in and complete college than students who don't—and to finish faster, too. A few studies have found disproportionate benefits for low-income students." (Field, 2020). By offering online dual credit courses, students gain the necessary technical skills earlier in preparation for the demands of higher education online competency. By 2015, nearly 70 percent of high schools offered dual enrollment, according to the Government Accountability Office. With the rise of dual credit courses, the School of Dreams Academy (SODA), a charter school located in a rural county in New Mexico, began exploring options to work with the University Branch Campus. The Academy (SODA) envisioned a school with a different approach to help students stay in school while providing them with opportunities for a successful future. According to the U.S. News & World Report (n.d.), "the student population includes 46% female and 54% male students. There are 32 full-time teachers and one full-time school counselor." Figure 1 shows the demographics of SODA. They apply a STEAM (Science, Technology, Engineering, Arts, and Math) educational model. The academy serves students from pre-K through 12th grade, and in addition, it is the only Early College High School in the county where students can graduate high school with an associate degree.

The County High School Coordinator of Education Support, who communicates with the University campuses and high schools, contacted me in the fall of 2014 to discuss offering a hybrid dual credit health course for incoming first-year high school students. I am the online instructor for the Personal Health Management Course at the University Branch Campus, a course required for the Health Education associate's degree. I agreed to develop and teach the class for SODA.

The first meeting involved the Coordinator of Education Support, Early College High School Liaison, and the health co-instructor from SODA. At the next meeting, we discussed the current curriculum at the academy and university branch.
campus and the vision for the future dual-credit course to be offered in spring 2015. Afterward, I mainly communicated with the SODA co-instructor and SODA students. Finally, I began course development by creating learning objectives aligned with high school 9-12 grade health education standards. Next, revise the existing university-level Personal Health Management syllabus, schedule, and course content to meet the needs of high school learners. I describe the design decisions, accomplishments, and challenges throughout the semester in this design case.

CONTEXT

The first-year level Personal Health Management dual-credit hybrid course is sixteen weeks long and meets three times a week, Mondays, Wednesdays, and Fridays. Each class meeting is one and a half hour long at the high school. Students need to get prior approval before the course begins to be able to access the course online through our university’s learning management system. They are then assigned an ID number and a Net ID from the university.

Two weeks before the dual credit course began, I went to the high school health class face to face to introduce myself, meet the students, and ensure they had access to the dual credit course. I asked the high school students if they had any experience taking an online or hybrid course. Some students had no previous experience taking a hybrid course, but some mentioned taking another online dual-credit hybrid course. However, students shared with me that they were excited about the hybrid health course, wanted to learn how to manage their health better, and were interested in learning how to use technology. According to the high school health instructor, these students enrolled in the dual credit course also earned higher-than-average grades in their other courses. Most students seemed motivated to complete this course to earn college credit.

After the first week of online student introductions were posted on the discussion board and the first week of assignments, prior knowledge was identified as a challenge. Some students were aware of general health issues (e.g., stress, lack of sleep, nutrition, immunity, diabetes, obesity, etc.), however, others were not.

In the following sections, I share my design decisions regarding the organization of course content adapted from the college level. I also detail how I overcame the challenges of students not finishing assignments, missing class, and students lacking reliable internet at home.

DESIGN PROCESS

With no existing 16-week hybrid health dual-credit course, I designed the course with health concepts where students would learn about one topic each week using content from the college-level Personal Health Management course. Students’ weekly structure in their face-to-face health course at SODA involves viewing a lecture I pre-recorded online, completing an assignment, participating in discussions throughout the week, and completing a quiz at the end on what they learned before moving on to the next topic. Students completed all assignments online with a computer in the classroom with face-to-face discussions based on that week’s topic.

The design process took about six months of meetings, creating, revising, and developing course content. After six months, the course was offered to first-year high school students for the first time at the School of Dreams Academy (SODA). Figure 2 depicts a timeline of the design process.

After the initial brainstorming meetings, course objectives needed to be developed by the primary instructor (myself) at the beginning of the design process, followed by creating and revising the course materials, activities, hybrid sequence, and finally, the online course development using the university’s learning management system. The SODA instructor sent me the high school health standards, and I ensured the college objectives aligned with the high school objectives. No one else was involved in the design process of creating the dual-credit hybrid course. The course was already being taught at the college level, so no approval was needed for this course as a dual credit. The SODA instructor ensured students would complete the required online assignments in the face-to-face class. Figure 3 illustrates the continuous process of course development and revisions referring to course objectives.
Course Objectives

I met with the co-instructor to view the existing high school health standards. The course offered at the university level had five main course objectives and was an 8-week course. The dual-credit course will be a 16-week course with learning objectives that must align with high school 9-12 grade health education standards. With many more objectives to add, no textbook, and little time for development, this was a challenge in the design process. Since the current health course has twenty-one objectives, these objectives need to be added to the five objectives from the college course. Before designing the dual-credit hybrid health course, I developed the main course objectives with the high school health standards combined with the university-level Personal Health Management course objectives before moving on to the course materials.

Course Materials

I developed and revised the course materials based on the course objectives and the SODA high school calendar. First, I created an instructional sheet for the students to request a Guest Net ID to log onto the university’s learning management system to access the online course before the spring semester. Also, a parent consent form was developed to be signed by a parent or guardian if they wanted their child to be exempt from parts of the health education curriculum (e.g., sexuality, mental health, etc.) before the course began. These procedures were needed before the course was available to the students. All forms turned in had no exemptions. If there were any exemptions, students would complete the high school health assignment for that topic to meet the high school health standard. Next, my design process involved much revision and course material organization. I revised the college-level Personal Health Management Course syllabus and schedule. The 8-week college course included three chapters covered each week. The dual-credit hybrid course would be a 16-week course with one topic covered each week. Students at SODA did not purchase the textbook, so I needed to keep much of the same content from the college-level course. With no textbook and little time for development, revising the materials was a challenge. However, I did take the chapter numbers out of the schedule and lecture videos. The course materials would be available to dual-credit students through the

FIGURE 2. Timeline of developing a dual-credit hybrid health course.

FIGURE 3. Course development process.
university’s learning management system. The materials included the pre-recorded lectures, assignments, discussion prompts, quizzes, final exam, personal health management plan, and additional resources in a folder on the homepage that students could access throughout the semester.

Course Activities
The course activities were structured like the college-level course activities of watching a lecture, completing assignments, participating in discussions, completing weekly quizzes, and a final personal health management plan. The college-level Personal Health Management course is an 8-week course, so I decided to have one health topic each week to ensure the high school student’s complete activities during their face-to-face health course scheduled for 16 weeks. The college-level course required the Connect Core Concepts in Health textbook (Insel et al., 2020). The same assignments and discussions were transferred from the college course to the hybrid dual-credit course. I adjusted any college facts or statistics within the content and lectures with high school student data. The assignments and discussions included high school perceptions of the topics covered. Due to budget issues, the high school could not purchase the textbook for each student or require the students to purchase the text. Therefore, I reviewed the assignments that required the text, revised them based on my lecture video content, and all the course activities were spread out.

For example, in week four, the topic covers the importance of sleep. The college students would read over the chapter, listen to the lecture video, and complete the worksheet and discussion. For the high school course, the students would listen to the lecture in class concerning sleep importance. Then they complete the worksheet, evaluating their sleep routine for one week, reflecting on how they felt each day with the number of hours they slept. The worksheet also included questions on what they learned from the online lecture with a final reflection on any changes they would like to incorporate into their sleep habits on the worksheet. Students discuss in class, answering, “Do you feel the advancement of technology helps with better sleep habits? Why or why not?”

Another example is in week seven concerning drug use. The hybrid dual credit course assignment was adjusted, requiring no textbook. Instead, students listen to the lecture and read over the worksheet’s content, enabling them to answer the questions at the bottom. Figure 4 provides an example of the college-level assignment concerning drug use as students can refer to the text. Figure 5 provides an example of the dual credit assignment on drug use based on the information from the lecture.

I revised the discussion forum questions to reflect high school student perspectives (e.g., as a high school student, how do you deal with stress during the school week?). However, each week’s quizzes stayed the same with only one topic, so I took questions out from other chapters, keeping five questions each week.

In addition, I revised the final project, the personal health management plan, giving the high school students an extra week to complete it and allowing them to discuss their plan with their peers in class. The personal health management plan from the college course stayed the same but was combined into one final plan. Since the college course was an 8-week course, the first part of the plan was due in week 4, and the second part was due in week 8. Since there was one topic each week for the hybrid course, I thought it would be beneficial to have one final project after going through all the content towards the end of the course.

Hybrid Course Sequence
The hybrid course sequence allows students to complete the online activities throughout the week and will enable them to view the lecture and engage in discussion during the face-to-face health class.
Since this course is offered only once a year, I go into the classroom about three times during the spring semester and teach a lesson. I chose to teach the lessons I thought the students would benefit from the most, such as stress management, sleep importance, and overall personal health management, which the students appreciated. The presented the content using the same PowerPoint lectures as the college-level course, with in-class discussions and a Q&A session, which replaced the students not having to view the lectures online for that week.

Online Course Development—Bb Learn Shell

Once I received a blank BlackBoard Learn course shell, I added assignments and discussions in one folder and quizzes in another. Quotes and images go along with the topics in the overview pages. Another folder included the PowerPoint slides I used to record the lecture videos, with a few differences from the college course. I re-recorded some of the videos using high school statistics and added the topic of sleep. A folder of additional resources was also included. Figure 6 represents the course being built by adding files into folders from the Personal Health Management college course before adding the 16-week modules.

Ongoing Evaluation

This course continues to go through changes each year based on end-of-the-course evaluations. As a result, I find additional resources to include, especially mental health and stress management. In addition, when I come across new assignment worksheets, I add them in the following semester to see the response. Lastly, I updated some lectures and discussion prompts to reflect on current information and new research. The hybrid course will be offered in a new university learning management system next spring 2023 semester, so I will start transferring all course content.

Developing successful online pedagogy using prior knowledge with current health knowledge and making learning personal health management more significant to students.

DUAL CREDIT HYBRID HEALTH COURSE

The 16-week Personal Health Management course is a dual-credit hybrid course offered at two high schools in New Mexico during the spring semesters. Students will explore the major areas of health information pertinent to understanding how to achieve, maintain, and promote positive health. Topics covered include mental health, drugs, human sexuality, prevention and control of diseases, nutrition, consumer health and ecology. The course offers three credits that students can earn towards college upon completion while meeting the high school 9-12 grade health education standards.
Final Course Objectives

Twenty-six course objectives aligned with the high school health standards:

1. Describe the six dimensions of wellness and the behavioral skills needed to establish a wellness lifestyle.
2. Identify significant goals of the national Healthy People Initiative 2020.
3. Describe the steps in creating a behavior management plan to change a health-related behavior.
4. Develop a personal plan to track and change a particular health-related behavior.
5. Describe and understand stress, sources of stress, the relationship between stress and disease, and techniques for managing stress.
7. Describe and understand the various aspects of healthy intimate relationships and the importance of communication skills.
8. Identify and describe the male and female sexual structure and function and the guidelines for safe, responsible sexual behavior.

9. Describe and understand fertility, pregnancy, and childbirth.
10. Identify various methods of contraception.
11. Identify and describe various aspects of the abortion issue.
12. Describe and understand aspects of drug use and abuse.
13. Understand the nature of alcohol and tobacco, problems associated with alcohol and tobacco abuse, and its effects on health.
14. Identify the essential nutrients and describe the functions they perform in the body.
15. Describe and understand the components of a healthy diet and a personal healthy diet plan.
16. Describe and understand the aspects of the five physical fitness components and the wellness benefits of physical activity.
17. Demonstrate an understanding of the basic concepts of weight management and methods to assess body composition.
18. Identify factors that may contribute to a weight management problem, including genetic, physiological, lifestyle, and psychosocial factors and the health risks associated with being overweight or obese.

19. Identify significant risk factors for cardiovascular disease and cancer plus other common diseases and preventive factors.

20. Identify and describe aspects of the body’s immune system and various sources of disease.

21. Identify and describe signs, symptoms, transmission, and prevention of STDs.

22. Identify strategies for healthful aging.

23. Identify environmental health concerns and the strategies that individuals, communities, and nations can take to preserve and restore the environment.

24. Develop personal skills for consumer consumption of health products, conventional, alternative, or integrative medical systems, and insurance.

25. Identify the most common types of unintentional injuries and prevention strategies.

26. Identify critical physical, social, and mental changes that may accompany aging.

**Final Hybrid Course Sequence**

The hybrid course sequence includes online and in-person activities completed three times a week (Mondays, Wednesdays, and Fridays 7:30 am–9:30 am) in their face-to-face health class. Figure 7 shows the hybrid course sequence.

First, the learners viewed the lecture videos I developed and took notes while watching the lecture. Next, students complete the worksheet, reflecting on what they learned from the lecture videos and how they can improve on the covered topic. Next, students participate in active discussions and complete a written reflection on the computer, summarizing the debate they engaged with their peers. Finally, students complete the quiz on the last day they meet that week before moving on to the next topic.
A Student Walkthrough

The students will first see the homepage. They can only see Module 1 during the first week to focus on the week's tasks. Then they will be able to see module 2 during the second week and so forth. The instructor opens each module on Sunday evening to ensure students get familiar with the Learning Management System before getting too far ahead. Once the next module is available, all previous modules remain open for students to refer to any prior content. Figure 8 shows the homepage's tabs on the left side menu bar and the topics and activities for the 16-week course. Additional resources are also available at the bottom; these will be available for viewing throughout the 16 weeks.

Module Layout Page

Each module presents the same layout with a quote based on the topic, a video announcement created by the instructor that describes what topic will be covered and the expectations for that week. A screenshot of the schedule is included on what is due, along with the overview page, lecture video folder, assignment tab, discussion tab, and finally, the quiz at the end. This layout goes along with the hybrid sequence. Figure 9 shows an example of the module page layout.

Orientation

Students will begin with an orientation overview that includes the course description, objectives, and how to
navigate the online course. Figure 10 shows the orientation overview page.

Next, the students will complete orientation activities before beginning week one assignments. Figure 11 shows the orientation activities, which include a video explaining the syllabus and schedule, a syllabus quiz, an introduction post for the students to introduce themselves, and a welcome survey.

Weekly Overview Page

The weekly overview page lets the students know the topic for the week, the weekly objectives, the materials needed, the activities, and a quick summary of what needs to be completed throughout the week. Quotes and images go along with the topics. Figure 12 shows the Week 1 module overview page.

Discussions

Students will then complete discussions based on the topic each week and reply to at least two other students. Figure 13 shows the discussion forum.

Lecture Videos

The instructor recorded lecture videos based on the topic for the week. The lectures are under 20 minutes, although some may go a little over time, depending on the content. Students will see an attached file where they can print the PowerPoint outline and take notes while watching the video. The instructor mentions this in the orientation and introduction. Figure 14 shows an example of a lecture video with printable notes.

FIGURE 10. Orientation overview page.

FIGURE 11. Orientation activities.
Module 1 Overview

Week 1 module overview page.

Module 1 Summary

- Review lecture
- Weekly Assignment
- Weekly Discussion
- Weekly Quiz

Introduction

This week you will view the lecture on Taking Charge of Your Health.

Learning Objectives

By completing the assignment, discussion and quiz for this module, students will be able to:
- Analyze your current lifestyle.
- Describe each wellness dimension.
- List Core Wellness strengths.

Required Instructional Materials

- Lecture & powerpoint

Activities

- Evaluate your Lifestyle Worksheet
- Quiz 1

FIGURE 12. Week 1 module overview page.

FIGURE 13. Discussion forum.

FIGURE 14. Lecture video & printable notes.
Assignments

After viewing the lecture video, the students will complete the assignment based on the weekly topic. Figure 15 is an example of the assignment: filling out a sleep log and reflecting on your sleep habits.

Quiz

Finally, after reviewing the lecture and completing the discussion and assignment each week, the students will complete a quiz at the end of the module. The quiz checks their knowledge before moving on to next week's topic. Figure 16 shows a preview of a quiz.

The Final Project—Personal Health Management Plan

In the last week, the students will complete a final project, Your Personal Health Management Plan. With the hybrid course, they will have the last two weeks to work on their plan after all the content has been reviewed, allowing more time to complete the following areas:

4. Behavior Change—Choose a behavior that is having the most negative impact on your life, health, and/or goals that you would like to change; list four negative effects

FIGURE 15. Sleep importance assignment.

FIGURE 16. Quiz preview.
Because

Strategy 2: Would help me reach (Behavior Goal)

Because

Strategy 3: Would help me achieve (Behavior Goal)

Because

Once I achieve (Behavior Goal)

I can stick to it by (Maintenance Strategy)

6. Monitor your Progress—Create a plan using any chart, graph, or journal to monitor your progress.

CHALLENGES AND REFLECTIONS

I found it challenging to organize all the course content based on the high school schedule during the design process as I had all this content from the college course and was short on time with only the prior semester to build this course. Furthermore, I needed to tweak the content since the students could not purchase the textbook. In addition, I needed to communicate with the co-instructor and the students during their face-to-face course if any questions arose when they logged online. Finally, it was challenging due to time restraints to revise many of the assignments and record new lecture videos that would meet the needs of the students. Developing this hybrid dual-credit course was my first experience working with first-year high school students. I was concerned with their perceptions and the experiences they would encounter while taking a hybrid dual-credit health course.

Once the course began, students responded well and interacted with the content. They effectively communicated when they had questions, and I felt they would respond well to each other during the online discussion. As far as face-to-face, the co-instructor said the course layout went well with the schedule, and since there was only one topic a week with multiple assignments, there was some flexibility on what they could complete during the week. I was afraid the students would feel rushed with everything due during the week and their high school academic load, but this seemed not the case. The students seemed to like the challenge of a dual-credit course and completing a final personal health management plan, they can continue to work on throughout their lives.

Another challenge I encountered was some students not finishing their assignments during class or those who missed class. Some students did not have reliable internet at home to complete the requirements that week. Therefore, accommodations must be made each week for students who missed class or did not have reliable internet by accepting late work or allowing them to finish their work at the school library during breaks.

I learned along the way to allow for multiple submissions of assignments. For example, many students who did not have experience with the university’s learning management system would submit a blank document. Changing the assignment settings to multiple attempts allowed them to submit again and be responsible for viewing if the document was successfully uploaded. In addition, this process saved time from students needing to contact me to see if I could open the assignment up again. I collected student responses from a Spring 2018 semester evaluation. Figures 18 and 19 (next page) show student responses.

I want to ask the students about their experiences and perceptions of taking a dual-credit course. Based on the student evaluations, I have looked over some recommendations. I have already implemented some shorter assignments and continue to use the announcement tab on Blackboard Learn to remind students what is coming up. I have not added any paper assignments as I will need to discuss this with the co-instructor if time allows for any in-class assignments. It seems feasible, but adjustments will need to be made to the schedule, possibly taking out an online assignment for that week and replacing it with a paper assignment.

Enrollment rates have also been a challenge due to the COVID-19 pandemic. According to Hoover (2020), the immediate enrollment of students from low-income high schools fell 29.2 percent, compared with 16.9 percent for graduates of higher-income schools. In addition, graduates of low-income schools were less likely to go straight to public institutions than their peers from higher-income schools, with drops of 20.5 percent and 10.7 percent (Hoover, 2020). Community colleges saw a nearly 10 percent enrollment decline during the pandemic, but since then, there has been a slight increase for the 2021–22 academic year. Many experts
attribute that largely to one factor: dual enrollment among high school students grew by 11 percent, (Knox, 2022).

Figure 20 shows that the enrollment rates dropped in SODA. In 2022, the dual-credit health course was the first year it was offered at Valencia High School. Future recruitment will be discussed before the following spring semester.

**CONCLUDING THOUGHTS**

When high school students complete a dual-credit course, it gives them the confidence to complete college-level coursework, motivating them to enroll in additional dual-credit...
courses and earn more college credits before graduation (Field, 2020).

The design process involved transferring content from a college-level Personal Health Management course with adjustments made without the high school students purchasing the textbook to the hybrid dual credit course. I encountered challenges requiring students without prior experience with a university learning management system to engage and navigate online content. This hybrid design allowed students the flexibility to complete the online course requirements during their face-to-face health course. When I launched the first course, some students did not have reliable internet service at home. Therefore, I accommodated the students who did not complete assignments during the week by allowing them to make up work at the school library the following week.

Throughout the course, communicating with the co-instructor, I also learned students needed additional flexibility with multiple submissions on assignments as they were still learning how to submit assignments on Blackboard Learn. Finally, through the end-of-the-course evaluations, I realized that students appreciated me lecturing a few topics during their face-to-face health class.

The final design of creating a dual-credit hybrid health course was successful. As I continue to teach it, improvements will be considered each year that it is offered based on student and co-instructor recommendations. My goal is to reach more high schools in the county offering more dual-credit opportunities for first-year students and improve their personal health knowledge.

REFERENCES

Field, K. (2020). The Rise of Dual Credit: More and more students take college classes while still in high school. That is boosting degree attainment but also raising doubts about rigor. Education Next, 21(1), 57.


FIGURE 20. Spring dual-credit enrollment.