Student Perceptions of Learning with SoftChalk: Economics Lessons and Activities

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ABSTRACT
Today's Gen Z college students enter nearly the same Principles of Economics classroom as their Gen X parents and Baby Boomer grandparents, despite a myriad of technological and pedagogical transformations occurring outside the discipline. Leveraging technology to expand learning opportunities beyond the constraints of the campus schedule offers an innovative way for professors to enhance their traditional teaching methods. This paper describes how faculty at a regional university utilized SoftChalk educational content authoring software to design and create online lessons with engaging activities for their Principles of Macroeconomics courses. It also presents results from a student perception survey on the effectiveness of the SoftChalk lessons and activities for supporting learning of economics content. Students also ranked their preferences for different types of SoftChalk activities and compared the software's overall helpfulness to other learning tools available within their courses.

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RESEARCH STATEMENT
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1. Introduction

For almost thirty years, the National Quinquennial Survey, first developed by Becker and Watts (1996), has detailed how undergraduate economics is taught. The survey continues to deliver predictably dismal and relatively static results. In 2020, more than 1,600 academic economists across the United States reported that they almost always use traditional lectures (83%), delivered at a whiteboard or chalkboard (83%), just as they did at the survey's inception in the 1990s. Textbooks, both print and online, are still the reading assignment of choice (83%), along with the use of instructor-developed problem sets (50%). The only significant change in how 21st-century economics is taught is the increased use of PowerPoint slides or other computer-generated displays (50%), more student-to-student, peer-led discussions (50%), and a minor rise in small group assignments up to 22% in 2020 from 6% in 2000 (Asarta et al., 2020). This means that today's Gen Z college students enter nearly the same Principles of Economics classroom as their Gen X parents and Baby Boomer grandparents, despite a myriad of technological and pedagogical transformations occurring outside the economics discipline.

One challenge for economic educators is finding ways to deepen the knowledge base of their students while acknowledging that there are simultaneous, competing demands and limitations. The information and technology age has led to an increasing amount of academic content (Heisserer, 2006), yet students and their instructors are constrained by the same limited number of classroom hours per week. While technology is often seen as part of the problem, it can also provide promising solutions. Educational technology can deepen and challenge students' understanding of concepts through learning-by-doing exercises and development of tasks that foster critical thinking skills. Technology-enhanced, authentic learning assignments can provide students with opportunities to do more than simply listen and recite. When used in collaboration with in-classroom learning, technology gives students time to practice applying economics concepts and solving problems in a low-stakes environment. However, implementing technology-based activities often comes at a greater upfront cost to the instructor versus sticking with the status quo of previously prepared chalk and talk materials.

This paper details our experience with SoftChalk, educational content authoring software that allows for the design of custom-built lessons and accompanying activities all delivered online. Throughout this study, "SoftChalk" refers to both the software and its cloud-based platform, as well as the authors' collection of SoftChalk-based lessons developed to accompany their own Principles of Economics coursework. Each custom-built lesson was presented to students as a "SoftChalk Activity" and includes a written portion where key information and relevant course content is presented alongside one or more interactive elements, such as identifying, ordering, labeling, sorting, connecting, or "Drag'N'Drop", a freeform method of sorting information (SoftChalk, 2024a). The SoftChalk activities were developed and created around content common to Principles of Economics coursework and placed into assigned classes as an educational intervention with a focus on expanding student learning opportunities. The shared development of instructional materials helped minimize instructor costs in time and effort across the department and allowed for more consistent content delivery. This paper begins with a brief review of the literature, followed by a description of how the economics faculty at a regional university utilized SoftChalk within their introductory Principles of Economics courses. In one example, we highlight how SoftChalk activities help students understand the basics of fiscal policy and support the department's assessment process of continuous improvement. The closing section presents the results of a student perceptions survey on the effectiveness of the SoftChalk activities that were implemented in this study.

2. Interactive Teaching in Economics

Despite the persistence of traditional lecture-style teaching in undergraduate economics courses, there is growing research interest in economic education which studies the scholarship of teaching and learning in economics (Hoyt and McGoldrick, 2019; Becker, 2001). Fernandez, Yetter, and Holder (2021) conducted a machine-learning analysis of more than 2,000 journal articles on economic education and found that publications were predominantly focused on evaluating class projects, activities such as games and experiments, course content development, and trends in economics degrees. Interest in economics education from editors, readers, and ultimately instructors generally revolves around innovative teaching techniques, but continues to struggle with the problem of classroom adoption, according to national survey data in economics (Asarta et al., 2020).

Introducing active learning projects and other changes in the classroom setting incurs costs to both the students and the economics professors, which can be a stumbling block on the path to embracing interactive teaching

methods across the discipline (Al-Bahrani et al., 2016a, 2016b). Instructors are often left in a "Catch-22" educational dilemma with mutually conflicting conditions. They are faced with a series of difficult economic choices as they try to allocate scarce resources, such as limitations on class time, funding of materials, and preparation time while trying to meet the seemingly unlimited wants of students and administrators alongside covering an increasing amount of course material (Kassis, 2011; Mandernach, 2006). In a study conducted at the largest annual conference in economics, one-third of Goffe and Kauper's 340 respondents noted that "students do not learn best from lecture, but it is cost-effective" (2014), which emphasizes the need for easy to adopt classroom improvements.

To lower the barriers to innovative teaching techniques, many economic educators have dedicated resources to developing materials to minimize adoption costs and address various pedagogical issues in economics. Through dedicated research they have developed compelling arguments for the adoption of less traditional teaching methods (Bligh, 2000); identified resources to keep the economics curriculum relevant (Wooten et al., 2021); built a storehouse of materials to creatively teach economics with movies (Cleveland et al., 2016; Mateer et al., 2016; Mateer and Stephenson, 2011), music (O'Roark et al., 2018; Holder et al., 2015; Lawson et al., 2008), television (Kuester et al., 2014; Hall, 2013; Ghent et al., 2011; Sexton, 2006), and other popular media (Acchiardo et al., 2017; Tinari and Khandke, 2000; Watts, 1998); and have focused on the inclusion of active learning, project-based learning, and cooperative learning techniques (Boyle et al., 2018; Buckles et al., 2013). SoftChalk activities and interactives are another potential tool in the economic educator's toolbox and, similar to other techniques, has potential to be used as an effective and engaging learning strategy (Lumpkin et al., 2015).

There is also economic education research that supports the idea that interactive exercises that are completed online may benefit students, regardless of the course's modality. Harmon and Lambrinos (2017) investigated the effectiveness of three types of online exercises in their Principles of Microeconomics courses: online discussion boards, weekly multiple-choice quizzes, and self-evaluation quizzes. Empirical results show that student participation in interactive learning exercises positively impacted exam scores for all course delivery formats: in-person, hybrid, and online sections. Similarly, Dendir (2022) looked specifically into whether online homework would improve learning in Principles of Microeconomics courses. Again, the evidence provided shows that online homework assignments improve learning for both in-person and online students. In our preliminary student perceptions study we have incorporated SoftChalk activities, which are all delivered online, into all types of our regional university's course modalities: in-person, hybrid, and online in order to explore similarities and differences in student feedback.

Moving beyond economics to more general education research focused on the science of teaching and learning, there is evidence regarding the use of game-based activities which are relevant to our use of SoftChalk. Ghory (2004) emphasizes that board games as an educational tool send a signal of intelligence, enhance critical thinking, and help simplify a model of the real world. Games in educational use can help students retain information and function as a motivator for engagement with the content. In the book *Teaching for Learning*, the historical use of games for educational or training purposes is discussed, and the authors propose that the use of games has benefits beyond enjoyability, as they also "foster creativity, promote teamwork, and create memorable classroom moments" (Major et al., 2021, p. 149). They highlight several "intentionally designed educational activities (IDEAs)" (p. 161), one being the use of crossword puzzles which is available as a SoftChalk activity. When constructed well, crossword puzzles and other interactives can provide an appropriate level of challenge and immediate feedback, a combination that can help engage students and facilitate recall of the course material.

3. Examples of SoftChalk Utilization

SoftChalk provides a shareable solution that helps offset the preparation costs to the individual instructor and brings added visibility to ease of learning, engagement, and information retention for students. As an online pedagogical tool, SoftChalk can be used to create custom instructional content alongside activities to help students master course learning objectives at their own pace. SoftChalk activities can be easily shared with one's colleagues, which helps lower the labor costs of adoption while providing consistent learning opportunities to all students in Principles of Economics classes regardless of course modality or instructional design. SoftChalk has been used in higher education, especially in STEM-related courses, but not in economics. As a National Science Foundation designated STEM field, economics educators can benefit from a knowledge transfer—discovering

what has already been shown to be effective in non-economics disciplines as an evidence-based teaching practice—and confirm the intervention is effective within economics.

Many educators have found SoftChalk to be a useful tool to enhance learning. Based on a review of literature outside of economics, this software application is often used as a review supplement in STEM courses or as practice sessions for applying analysis alongside knowledge-based solutions. Zheng and Ferreira (2021) utilized SoftChalk to promote active engagement in an oral pathology class. They developed low-stakes, case-based lessons followed by assessment activities, recorded the students' highest score, and 91% of students agreed or strongly agreed that the SoftChalk activities were effective and helped them apply their content knowledge. Later, Zheng et al. (2024) found that SoftChalk's self-paced modules were also a useful way to promote consistency across dental faculty who vary across several factors including expertise, training, and accessibility. To maintain faculty calibration, professional development activities were enhanced with SoftChalk activities. SoftChalk has also been incorporated into undergraduate animal science courses as a review method for course concepts. Surveys of students indicate that more than 80% of students believe the activities helped them retain the material and over 85% felt that they were more prepared for subsequent course assessments (Pulec et al., 2016).

SoftChalk active-learning modules have also been successful in preparing first-year medical students for upper limb cadaver dissections. Images, text, and other activities are focused on preparing students for the realities of learning anatomy from the in-person dissection process. By implementing a multi-modal learning approach, students can know what to expect when they arrive in the lab, practice techniques, and arrive better prepared to the classroom. Almost 80% of students surveyed indicated that the SoftChalk activities increased their understanding of course content and wished they had similar modules to prepare them for all their dissection labs (Tooley et al., 2018). In a first-year engineering course, SoftChalk activities were assigned to be completed prior to attending class and students showed gains in both coursework and end of semester assessments versus their respective control groups in engineering physics and science modules (Senthilkumar, 2019).

SoftChalk active-learning exercises have also been integrated into non-STEM courses. In the social sciences, it has been used to enhance student learning and develop critical thinking skills with a specific focus on information literacy that aligns with a university quality enhancement plan. Student feedback was overwhelmingly positive (McClellan, 2016). In a flipped class framework for business management education, instructor videos were integrated into SoftChalk activities with limited success. Students, particularly those who found the flipped model to be challenging, often did not complete the accompanying SoftChalk lesson at all and arrived unprepared for class (Pragman, 2014). For an online, graduate-level, criminal justice course SoftChalk served as a useful and engaging tool for short, focused lessons and functioned as a self-check for students on comprehension of assigned course materials (Bernat and Ábrego, 2019). SoftChalk has also been used in courses related to child development. Wynants (2022) created weekly exercises based on content from an open educational resource (OER) textbook alongside original examples. The most popular element cited as contributing to student learning was the ability to self-check with SoftChalk quiz questions and retake exercises in order to improve their grade.

SoftChalk has existed as an eLearning tool since 2002 and makes it easy to create, distribute, and manage interactive tools that can enhance lecture or textbook content. Despite its use in a wide range of disciplines — from oral pathology to professional development to training for cadaver dissection labs for more than 20 years, a word search in the American Economic Association's reference tool for economics (EconLit) and Google Scholar failed to uncover even a single published article describing the use of SoftChalk in an economics class. It is unclear if SoftChalk is being ignored, dismissed, or simply underutilized in the teaching of economics. However, developing customized, interactive exercises is straightforward with this educational software and can serve as a useful supplement in an economics course.

What follows in the next section is an example of how economics department faculty have coordinated to use and evaluate SoftChalk activities developed to improve student learning in introductory economics classes. We will also describe how SoftChalk activities might be utilized as part of a university's assessment process and analyze data collected from student surveys on their perception of the SoftChalk assignments. All available SoftChalk activities, including the examples we will review in the next two sections, are listed in Appendix A. Note that a SoftChalk license is paid by the instructor and there is no cost passed on to users.

4. Example of a SoftChalk Activity: Fiscal Policy Tools
Developing a SoftChalk activity is similar to the process an instructor would use to develop an in-person classroom lesson. Once the topic is identified, the instructor outlines specific learning objectives and creates content which can include text, videos, or even images. Once materials for the SoftChalk activity have been developed, the instructor can add SoftChalk activities that are appropriate to the content.

As an example, consider the SoftChalk activity developed to cover the topic of fiscal policy tools, which was designed to help the students meet the following learning objectives:

- Distinguish between automatic stabilizers and discretionary fiscal policy.
- Define the three tools of fiscal policy - government purchases, taxes, and transfer payments.
- Explain what it means for the economy to be in a recessionary gap and an expansionary gap.
- Describe the appropriate fiscal policy responses when an economy is experiencing a recessionary gap.
- Describe the appropriate fiscal policy responses when an economy is experiencing an expansionary gap.

The SoftChalk activity begins with an overview page that provides students with a lesson summary, a button to start the lesson, and a table of contents as illustrated in Figure 1. Students begin by clicking on "Start Lesson" and are presented with descriptive content on the difference between automatic stabilizers and discretionary fiscal policy as shown in Figure 2.

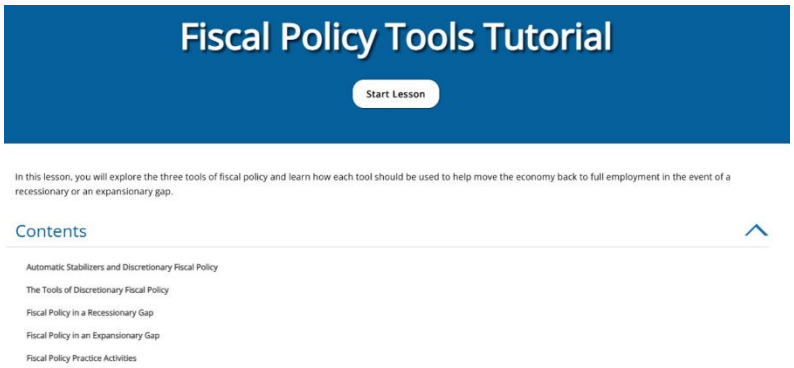

Figure 1 Overview page developed for the Fiscal Policy Tools Tutorial.

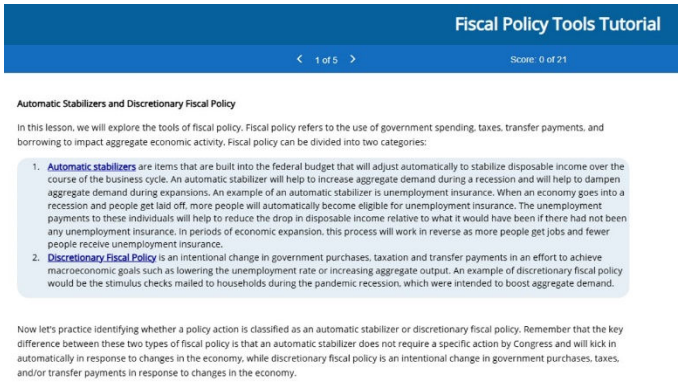

Figure 2 Differences between automatic stabilizers and discretionary fiscal policy.

Once the relevant concepts have been introduced, students can immediately check their understanding with a sorting activity where they are given various fiscal policy options and asked to sort them by whether they would be considered an automatic stabilizer or discretionary fiscal policy as illustrated in Figure 3. Then the focus shifts to the tools of discretionary fiscal policy. Students are introduced to the three tools of discretionary fiscal policy—government purchases, taxes, and transfer payments. Each policy option is illustrated with a mechanical tool to

help students visualize them as policy tools as seen in Figure 4. Since students often have difficulty distinguishing between government purchases and transfer payments, the SoftChalk activity includes a sorting exercise where students can practice identifying examples of government purchases and transfer payments as shown in Figure 5.

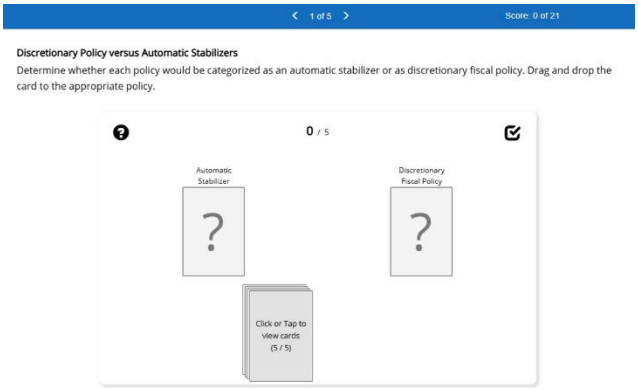

Figure 3 A sorting activity for the difference between automatic stabilizers and discretionary fiscal policy.

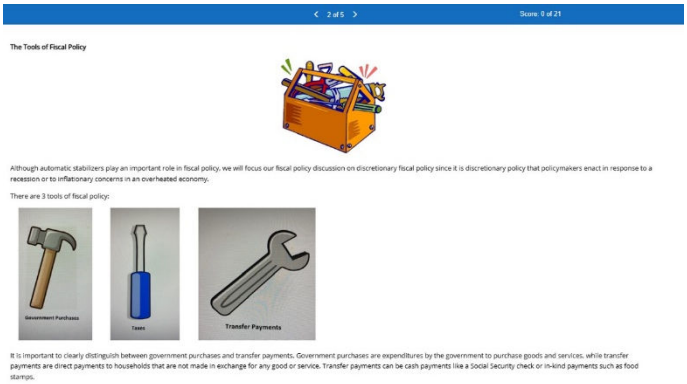

Figure 4 Visualization of different discretionary fiscal policy tools.

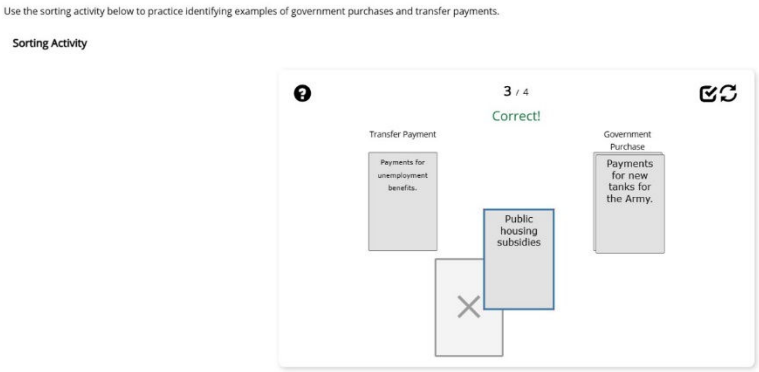

Figure 5 A sorting exercise on different discretionary policy tools.

The SoftChalk activity continues with information that discusses the appropriate discretionary fiscal policy tools to use if the economy is experiencing a recessionary gap and an expansionary gap. It includes both text descriptions and aggregate supply and demand graphs depicting the gaps which are presented in Figure 6. The final content section includes exercises that review the use of discretionary fiscal policy tools.

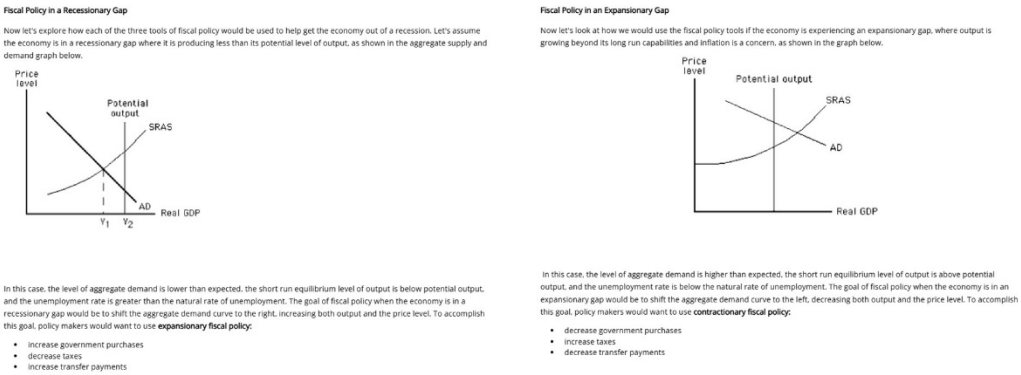

Figure 6 Exploring how fiscal policy is used in recessionary and expansionary gaps.

The next SoftChalk interactive is an identify-matching activity where students are asked to match a description of the economy in a recessionary and expansionary gap with the appropriate aggregate supply and demand (AS-AD) graphs as shown in Figure 7. Next, students are asked to answer a selection of multiple-choice and true-false questions regarding an economy in a recessionary gap as illustrated in Figure 8 to check their understanding of the key concepts.

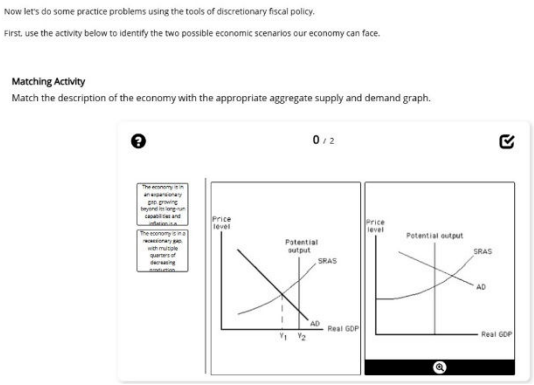

Figure 7 A matching activity to identify expansionary and recessionary gaps in AS-AD graphs.

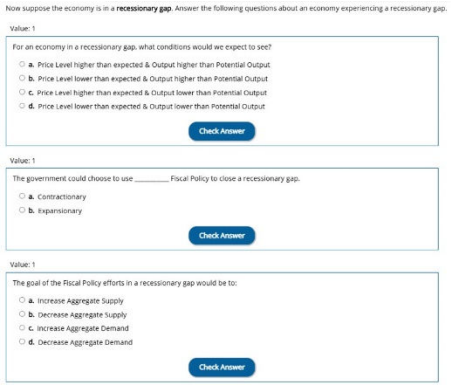

Figure 8 Knowledge check on recessionary gaps with multiple-choice and true-false questions.

The final portion reviews the appropriate use of fiscal policy tools in an expansionary gap. It begins with a connections activity, where the students are asked to identify the appropriate ways to use fiscal policy tools if the economy is in a recessionary gap, as seen in Figure 9. Then includes multiple-choice questions about the economic conditions associated with an expansionary gap, some of which are illustrated in Figure 10. The SoftChalk activity ends with a final connections activity where students are asked to identify the appropriate use of fiscal policy tools in an overheated economy as shown in Figure 11.

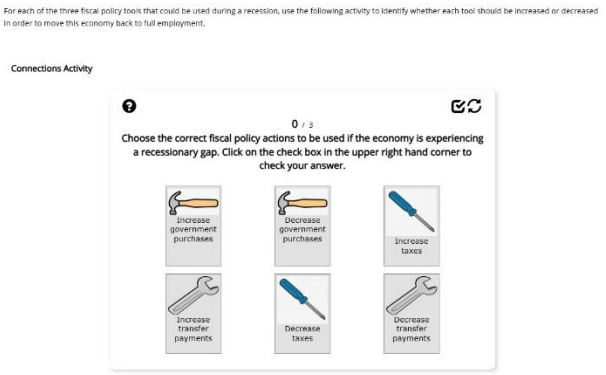

Figure 9 A connections activity showing appropriate ways to use fiscal policy tools.

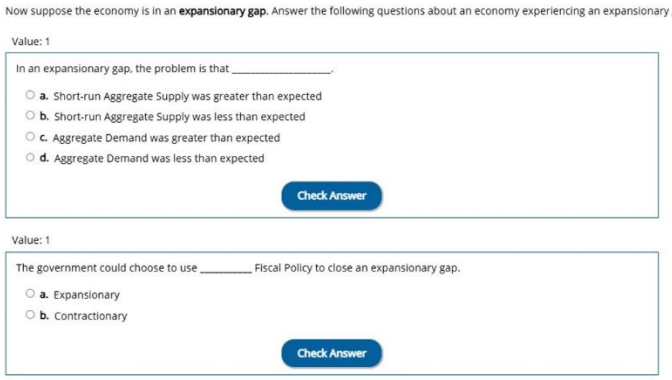

Figure 10 A review of fiscal policy tools knowledge with multiple-choice questions.

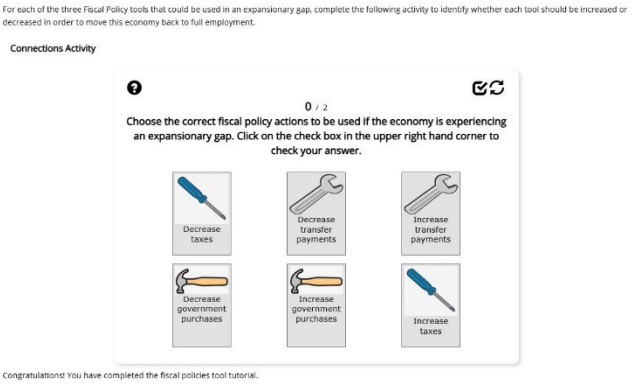

Figure 11 Identifying the appropriate use of fiscal policy tools in an overheated economy.

This fiscal policy lesson was set up as a non-graded practice tutorial. However, SoftChalk activities can be integrated into many learning management systems to create exercises that are automatically graded. There is also the option for students to submit completion certificates after they have achieved a certain required score on the activities. SoftChalk activities like the one discussed above provide students with the opportunity to do interactive, active-learning similar to what occurs in an in-person class but delivered in an online environment. While multiple-choice questions are an option in SoftChalk, there are many other activity options instructors can choose from to help keep the students interested and engaged. The fiscal policy example uses only a few of the activity options that are available. SoftChalk activities provide students with an immediate opportunity to test their understanding of a topic in a low-stakes and interesting way, which can help eliminate confusion about important concepts before higher-stakes assessment occurs in the form of a graded quiz or examination.

5. Other Examples of SoftChalk Activities

The SoftChalk activity on fiscal policy tools uses multiple SoftChalk interactives, including quiz questions, sorting, identifying, matching with images, and connections. However, there are other interactives available, and these were integrated into the other SoftChalk activities developed for our Principles of Macroeconomics and Microeconomics courses. For example, crossword puzzles as shown in Figure 12, were used to help students master foreign exchange vocabulary. Hot spot exercises as seen in Figure 13 were used to develop student understanding of the production possibilities. Figure 14 shows a Drag'N'Drop example which examines the relationship between the value of the marginal propensity to consume and the value of the simple spending multiplier.

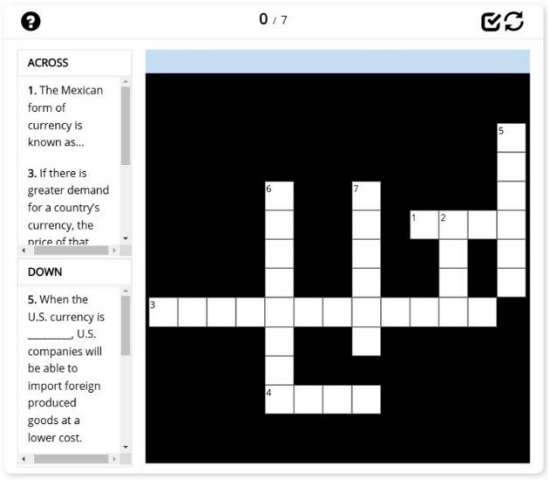

Figure 12 A crossword puzzle to help with foreign exchange vocabulary.

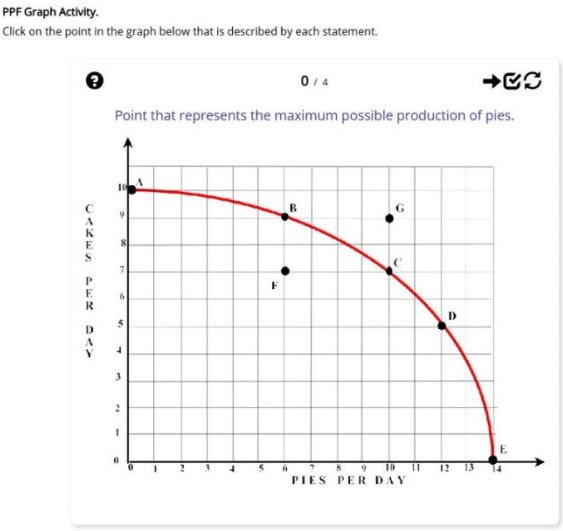

Figure 13 A hot spot image activity used to identify locations on the production possibilities frontier.

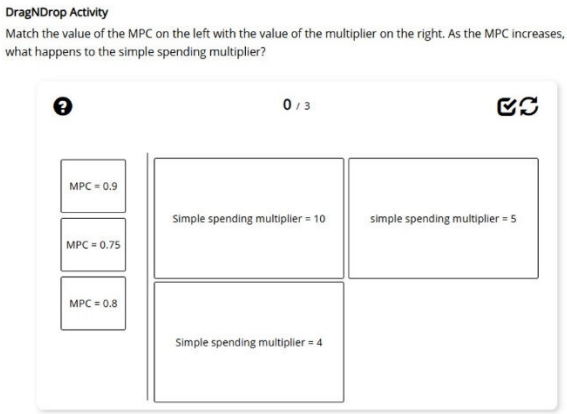

Figure 14 A Drag'N'Drop example using the simple spending multiplier.

6. Advantages of Using SoftChalk Activities in Economics

Due to the COVID-19 shutdown and sudden mid-semester shift to virtual learning for all courses in Spring 2020, instructors worldwide had to quickly adjust both how to deliver course content and how to assess student learning. This resulted in a drastic increase in the use of video lectures to deliver course content. A meta-analysis on 105 published research studies compared the use of videos to more traditional methods of teaching to try and determine if one method is more effective for learning. One finding of this research was that student interaction with the method impacted its effectiveness. They found that a video lecture with no supplemental activity for engagement would not be more effective than an in-person lecture that includes interaction between the students and instructors. However, their research also indicates that a video lecture used in conjunction with some type of interactive activity is more impactful than a traditional lecture on its own (Noetel et al., 2021).

As such, we believe that including these SoftChalk activities alongside in-person lectures or video lectures will increase student learning. While there are other content authoring tools available for instructors to use, we selected SoftChalk for a few reasons. First, it is designed for the adult learner. Some of the alternative design tools are cartoonish and seem better suited for younger learners. Additionally, the SoftChalk activities are user-friendly for both our instructors and our students. From the instructor side, we simply share a common web address for each activity; thus, making it easy to incorporate them into multiple sections, taught by multiple instructors. Even if an adjunct is hired right at the start of a new semester, it will only take a few minutes to have these activities set up as an external link for a given course in our learning management system (LMS). In addition, if edits are made to activities they will populate throughout all courses and if more lessons are added we can quickly and easily share them with others. Another benefit to the instructors is that these activities are auto scored and can be set up so that students receive a completion certificate once they achieve a pre-set score. SoftChalk can also be integrated into the LMS directly, which results in the scores on activities automatically transferring into the LMS gradebook.

From our perspective, we also believe SoftChalk has several benefits for our students. The first is the overall accessibility of the lessons. Students might benefit from the simplicity of accessing these lessons. Students simply click on the link provided by the instructor and the website is mobile-device-friendly. Additionally, SoftChalk has implemented several major product enhancements based on feedback from accessibility specialists at various educational institutions. One example is that SoftChalk lessons can integrate with an external tool, ReadSpeaker, so that students have the option to have the lessons content spoken aloud (SoftChalk, 2024b). We also believe that the activities are intuitive for students to move through from start to completion. Furthermore, SoftChalk has a large variety of question types, such as multiple choice, multi-select, and fill-in-the-blank, which enables lesson authors to create engaging lessons. Perhaps most importantly, SoftChalk has a diverse range of other learning activities that are not always available when creating online learning modules or traditional printed exercises. Options such as sorting questions, interactive diagrams, ordering and timeline questions, crossword puzzles, and others help instructors create more dynamic lessons that we think will help students engage more meaningfully with the concepts and increase overall student learning.

7. Uses of SoftChalk in Assessment

An interesting addition to the creation of this collection of SoftChalk activities and subsequent surveying of student perceptions was the ability to utilize SoftChalk as part of the departmental assessment process. Assessment is part of the accreditation procedure for most regional accreditors such as the Southern Association of Colleges and Schools Commission on College (SACSCOC), as well as by specialized accreditors such as the Association to Advance Collegiate Schools of Business (AACSB). SoftChalk can be particularly useful as part of the continuous improvement process for assessment purposes.

After a topic is identified as an area of weakness for students by assessment data, a SoftChalk activity can be developed to address the known weakness. The home department of the authors adopted the use of SoftChalk activities alongside supplemental video instruction in order to improve student learning in several areas that were identified as areas of weakness by their internal assessment data. For example, since students were struggling with the tools of monetary policy, they developed a SoftChalk activity on the use of the tools of monetary policy that is paired with a video from the Federal Reserve Bank and is included in all Principles of Macroeconomics courses in an effort to improve student learning in this specific area.

Some advantages of using SoftChalk activities for continuous improvement are that they provide consistent content across all sections, they can be easily distributed to new or short-term faculty, they are not tied to specific textbooks, and faculty can simply include links to the exercise in the learning management system or syllabus. There is also the option of having students complete the exercise on their phone during an in-person class. While we have not yet had time to fully close the loop to determine the effectiveness of the activities in improving student learning, the implementation of the improvements was able to be done relatively quickly and easily using SoftChalk.

8. Student Perceptions Survey of SoftChalk Activities

At the end of the Spring 2023 semester, students enrolled in several sections of Principles of Macroeconomics were surveyed to gauge overall student satisfaction with the use of SoftChalk activities. Since SoftChalk activities are used for departmental instruction improvements for program assessment, our goal was to analyze the survey data to see if student perceptions align with our conjectures regarding SoftChalk and its effectiveness as a supplemental learning tool for students. The survey also gathered information on how students ranked the different types of activities and how they felt about SoftChalk relative to other types of course learning material. The survey instructions and questions can be found in Appendix B.

The survey was composed of students taking Principles of Macroeconomics from four different instructors across three different course modalities. After an initial review of the data from the Spring 2023 surveys, the survey was administered again in the Fall 2023 term. We received 147 usable survey responses, eighty-three for Spring 2023 and 64 for Fall 2023 with three surveys removed from the final data set. Two were incomplete and one had a mismatch between the identified instructor and the modality of course delivery. Table 1 shows the summary statistics for the student sample who completed the survey. Over half identified as female (52.4%), almost a quarter were dual-enrolled high school students (22.4%), and college freshmen make up the largest part of the sample (40.1%). Almost half of the students were enrolled in a traditional, in-person course (43.5%), all taught by the same instructor. Online students were 27% of the sample and taught by two different instructors. Likewise, hybrid students made up 29% of the sample and taught by two different instructors.

The survey asked students the extent to which they agreed or disagreed with various statements about the SoftChalk activities that they completed that semester. For each statement, students were asked whether they strongly agreed, agreed, were neutral, disagreed, or strongly disagreed with the statement. Table 2 summarizes the responses from students to these statements, presenting the overall results and the breakdown by course modality. Surveys were proctored by other faculty or graduate student assistants using a common set of instructions alongside a website link and QR code for all modalities.

Table 1 Summary statistics for a two-semester SoftChalk student perceptions survey.

CATEGORY	FREQUENCY	PERCENTAGE
Gender		
Male	67	45.6%
Female	77	52.4%
Some Other Way	1	0.7%
Prefer Not to Answer	2	1.4%
Student Classification		
Dual-Enrolled (High School)	33	22.4%
College Freshman	59	40.1%
College Sophomore	35	23.8%
College Junior	15	10.2%
College Senior	5	3.4%
Course Modality		
In-Person	64	43.5%
Online	40	27.2%
Hybrid	43	29.3%
Semester Surveyed		
Spring 2023	83	56.5%
Fall 2023	64	43.5%
Instructor/Modality		
Instructor 1 – in-person only	64	43.5%
Instructor 2 – hybrid only	24	16.3%
Instructor 3 – online only	28	19.0%
Instructor 4 – hybrid and online	31	21.1%

Students were surveyed in Spring 2023 (83) and Fall 2023 (64) semesters. For n=147 usable survey responses, this table summarizes the sample.

Overall, students appear to have a positive view of SoftChalk as a tool to help them understand economics, learn, and prepare for tests or quizzes although results do differ by course modality. Across all modalities, 80.3% agreed or strongly agreed with the statement: "*The interactive approach of SoftChalk Activities was effective for learning.*" In-person and online students showed the strongest agreement with this statement, with almost 83% of students agreeing or strongly agreeing. In comparison, only 74.4% of hybrid students agreed or strongly agreed that the SoftChalk activities were effective for learning.

Three-fourths (75.3%) of the students either agreed or strongly agreed with the statement: "*The SoftChalk Activities helped me to understand economic concepts.*" Again, in-person students showed the strongest agreement, with almost 86% agreeing or strongly agreeing, followed by online students (72.5%), and hybrid students reported 62.8%. Hybrid students appear to have a slightly less positive perception of SoftChalk activities versus their online or in-person counterparts.

Regarding test preparation, 71.5% of students agreed or strongly agreed with the statement: "*The SoftChalk Activities helped improve my preparation for quizzes or tests.*" Once again, the strongest agreement came from the in-person students, with 81.3% agreeing or strongly agreeing, followed by online students (72.5%), with hybrid students lagging at 55.8%. Approximately 60% of the students surveyed agreed or strongly agreed with the statement: "*I wish all my economics courses included SoftChalk Activities to help me.*" Online students showed the strongest agreement with this statement (67.5%) compared to 62.5% for in-person students and just 51.2% of hybrid students. Most of students surveyed (60.3%) reported that they completed all the assigned SoftChalk activities. Online students (72.5%) had the highest percentage, followed by hybrid students (65.1%). In contrast, only 49.2% of in-person students completed all the SoftChalk activities.

Table 2 Student feedback on SoftChalk activities by course modality.

The SoftChalk Activities helped me to understand economic concepts.

	In-Person, n=63		Online, n=40		Hybrid, n=43		Total, n=146	
Strongly Disagree	0	0.0%	3	7.5%	2	4.7%	5	3.4%
Disagree	0	0.0%	3	7.5%	3	7.0%	6	4.1%
Neutral	9	14.3%	5	12.5%	11	25.6%	25	17.1%
Agree	31	49.2%	14	35.0%	17	39.5%	62	42.5%
Strongly Agree	23	36.5%	15	37.5%	10	23.3%	48	32.9%

The SoftChalk Activities helped improve my preparation for quizzes and tests.

	In-Person, n=64		Online, n=40		Hybrid, n=43		Total, n=147	
Strongly Disagree	0	0.0%	3	7.5%	2	4.7%	5	3.4%
Disagree	1	1.6%	3	7.5%	3	7.0%	7	4.8%
Neutral	11	17.2%	5	12.5%	14	32.6%	30	20.4%
Agree	24	37.5%	16	40.0%	13	30.2%	53	36.1%
Strongly Agree	28	43.8%	13	32.5%	11	25.6%	52	35.4%

The SoftChalk Activities were simple to use and navigate.

	In-Person, n=64		Online, n=40		Hybrid, n=43		Total, n=147	
Strongly Disagree	0	0.0%	4	10.0%	3	7.0%	7	4.8%
Disagree	0	0.0%	1	2.5%	5	11.6%	6	4.1%
Neutral	12	18.8%	3	7.5%	4	9.3%	19	12.9%
Agree	24	37.5%	20	50.0%	18	41.9%	62	42.2%
Strongly Agree	28	43.8%	12	30.0%	13	30.2%	53	36.1%

I enjoyed completing the SoftChalk assignments.

	In-Person, n=64		Online, n=40		Hybrid, n=43		Total, n=147	
Strongly Disagree	0	0.0%	4	10.0%	1	2.3%	5	3.4%
Disagree	2	3.1%	5	12.5%	6	14.0%	13	8.8%
Neutral	27	42.2%	11	27.5%	12	27.9%	50	34.0%
Agree	20	31.3%	10	25.0%	17	39.5%	47	32.0%
Strongly Agree	15	23.4%	10	25.0%	7	16.3%	32	21.8%

The interactive approach of SoftChalk Activities was effective for learning.

	In-Person, n=64		Online, n=40		Hybrid, n=43		Total, n=147	
Strongly Disagree	0	0.0%	3	7.5%	1	2.3%	4	2.7%
Disagree	0	0.0%	1	2.5%	4	9.3%	5	3.4%
Neutral	11	17.2%	3	7.5%	6	14.0%	20	13.6%
Agree	31	48.4%	21	52.5%	19	44.2%	71	48.3%
Strongly Agree	22	34.4%	12	30.0%	13	30.2%	47	32.0%

I wish all of my economics courses included SoftChalk Activities to help me.

	In-Person, n=64		Online, n=40		Hybrid, n=43		Total, n=147	
Strongly Disagree	0	0.0%	5	12.5%	3	7.0%	8	5.4%
Disagree	0	0.0%	1	2.5%	8	18.6%	9	6.1%
Neutral	24	37.5%	7	17.5%	10	23.3%	41	27.9%
Agree	25	39.1%	21	52.5%	14	32.6%	60	40.8%
Strongly Agree	15	23.4%	6	15.0%	8	18.6%	29	19.7%

I completed the following number of assigned SoftChalk Activities.

	In-Person, n=63		Online, n=40		Hybrid, n=43		Total, n=146	
All of Them	31	49.2%	29	72.5%	28	65.1%	88	60.3%
Some of Them	29	46.0%	10	25.0%	15	34.9%	54	37.0%
None/Don't Remember	3	4.8%	1	2.5%	0	0.0%	4	2.7%

A summary of the student survey answers, sorted by modality, with slight differences in number of responses.

Two other statements in the survey measured student perceptions of SoftChalk's ease of use and how much they enjoyed utilizing the activities. Over three-quarters (78.3%) agreed or strongly agreed that: "*The SoftChalk activities were simple to use and navigate*." Meanwhile, only 53.8% of students, with very minor variation across modalities, were in agreement with the statement: "*I enjoyed completing the SoftChalk assignments.*" However, this statement also had a high percentage of neutral students (34% for the survey as a whole) which may not be surprising for perceptions about enjoyment of economics coursework.

In the final portion of the survey, students were asked to rank the various types of specific SoftChalk interactive learning exercises used in the activities which were grouped into four categories:

1. Sorting or Drag'N'Drop - Sorting is moving a stack of items into different categories while Drag'N'Drop is a freeform method of sorting and includes dragging items/objects to match with a corresponding target.
2. Interactive Identification – Interactive identification includes identification, hot spot interactives, and connections activities. Identification is scrolling through words or phrases until you find one with a matching answer to the associated image. Hot spot interactives require students to identify a specific part of an image or graph, and connections activities ask students to make choices from a group of items.
3. Crossword Puzzles – Students complete a puzzle by identifying the word associated with a given clue.
4. Quiz Questions - Quiz questions can include assorted styles, such as multiple choice, fill-in-the-blank, short answer, sentence completion, etc.

Table 3 Student rankings of SoftChalk activities by course modality.

Sorting or Drag'N'Drop								
	In-Person, n=59		Online, n=36		Hybrid, n=42		Total, n=137	
Ranked 1st	18	30.5%	8	22.2%	16	38.1%	42	30.7%
Ranked 2nd	22	37.3%	20	55.6%	9	21.4%	51	37.2%
Ranked 3rd	14	23.7%	6	16.7%	11	26.2%	31	22.6%
Ranked 4th	5	8.5%	2	5.6%	6	14.3%	13	9.5%
Interactive Identification								
	In-Person, n=59		Online, n=36		Hybrid, n=42		Total, n=137	
Ranked 1st	10	16.9%	7	19.4%	4	9.4%	21	15.3%
Ranked 2nd	15	25.4%	11	30.6%	13	31.0%	39	28.5%
Ranked 3rd	23	39.0%	15	41.7%	16	38.1%	54	39.4%
Ranked 4th	11	18.6%	3	8.3%	9	21.4%	23	16.8%
Crossword Puzzles								
	In-Person, n=59		Online, n=36		Hybrid, n=42		Total, n=137	
Ranked 1st	3	5.1%	1	2.8%	8	19.0%	12	8.8%
Ranked 2nd	13	22.0%	4	11.1%	8	19.0%	25	18.2%
Ranked 3rd	9	15.3%	3	8.3%	5	11.9%	17	12.4%
Ranked 4th	34	57.6%	28	77.8%	21	50.0%	83	60.6%
Quiz Questions								
	In-Person, n=59		Online, n=36		Hybrid, n=42		Total, n=137	
Ranked 1st	26	44.1%	21	58.3%	20	47.6%	67	48.9%
Ranked 2nd	13	22.0%	4	11.1%	10	23.8%	27	19.7%
Ranked 3rd	11	18.6%	11	30.6%	9	21.4%	31	22.6%
Ranked 4th	9	15.3%	0	0.0%	3	7.1%	12	8.8%

A summary of student ranking of SoftChalk activity types, sorted by modality with n=137 respondents.

The 137 students who responded to this portion of the survey gave a relatively clear ranking of these exercises, as shown in Table 3. Quiz questions were ranked number 1 by 48.9% of students, with 68.6% ranking them as a first or second choice. Sorting or Drag'N'Drop exercises were ranked second by 37% of students, with 67.2% listing

them as a first or second choice, while 39.4% of students ranked interactive identification exercises as the third best option. The majority of students (60.6%) reported crossword puzzles as the lowest-ranked SoftChalk activity. These rankings were consistent across course modalities, although the hybrid students did not rank the sorting and Drag'N'Drop as high as the in-person and online students. The strong preference for quiz questions was somewhat surprising to us as instructors but may reflect that this was the most familiar type of question and often the quickest to answer. Crossword puzzles may have been the least popular because they can be more challenging, take longer to complete, and are less mobile-friendly.

The survey also asked students to rank several types of course learning materials to tease out student perceptions of textbook readings, the use of videos, the SoftChalk activities, other assigned readings, and publisher interactive platforms. Table 4 provides a summary of the ranking results.

Table 4 Student rankings of different types of learning materials by course modality. N=134

Assigned Textbook

	In-Person, n=59		Online, n=35		Hybrid, n=40		Total, n=134	
Ranked 1st	5	8.5%	10	28.6%	6	15.0%	21	15.7%
Ranked 2nd	4	6.8%	4	11.4%	8	20.0%	16	11.9%
Ranked 3rd	7	11.9%	9	25.7%	7	17.5%	23	17.2%
Ranked 4th	23	39.0%	8	22.9%	2	5.0%	33	24.6%
Ranked 5th	20	33.9%	4	11.4%	17	42.5%	41	30.6%

Posted or Linked Videos

	In-Person, n=59		Online, n=35		Hybrid, n=40		Total, n=134	
Ranked 1st	18	30.5%	8	22.9%	9	22.5%	35	26.1%
Ranked 2nd	20	33.9%	7	20.0%	12	30.0%	39	29.1%
Ranked 3rd	14	23.7%	9	25.7%	9	22.5%	32	23.9%
Ranked 4th	7	11.9%	7	20.0%	6	15.0%	20	14.9%
Ranked 5th	0	0.0%	4	11.4%	4	10.0%	8	6.0%

SoftChalk Activities

	In-Person, n=59		Online, n=35		Hybrid, n=40		Total, n=134	
Ranked 1st	15	25.4%	14	40.0%	11	27.5%	40	29.9%
Ranked 2nd	23	39.0%	8	22.9%	8	20.0%	39	29.1%
Ranked 3rd	17	28.8%	4	11.4%	6	15.0%	27	20.1%
Ranked 4th	3	5.1%	7	20.0%	10	25.0%	20	14.9%
Ranked 5th	1	1.7%	2	5.7%	5	12.5%	8	6.0%

Other Supplemental Readings

	In-Person, n=58		Online, n=35		Hybrid, n=40		Total, n=133	
Ranked 1st	21	36.2%	3	8.6%	4	10.0%	28	21.1%
Ranked 2nd	8	13.8%	8	22.9%	9	22.5%	25	18.8%
Ranked 3rd	14	24.1%	8	22.9%	12	30.0%	34	25.6%
Ranked 4th	7	12.1%	5	14.3%	12	30.0%	24	18.0%
Ranked 5th	8	13.8%	11	31.4%	3	7.5%	22	16.5%

Cengage Interactivities: Aplia or MindTap

	In-Person, n=56		Online, n=35		Hybrid, n=39		Total, n=130	
Ranked 1st	3	5.4%	3	8.6%	14	35.9%	20	15.4%
Ranked 2nd	4	7.1%	10	28.6%	4	10.3%	18	13.8%
Ranked 3rd	4	7.1%	3	8.6%	5	12.8%	12	9.2%
Ranked 4th	17	30.4%	7	20.0%	7	17.9%	31	23.8%
Ranked 5th	28	50.0%	12	34.3%	9	23.1%	49	37.7%

A summary of students' ranking of their preferences for different learning materials.
Data is sorted by modality with a differing number of respondents.

For in-person classes, other supplemental readings had the largest proportion of students (36.2%), ranking it as the first choice. Other supplemental readings were defined in the survey as lecture notes, practice problems, reading guides, and articles or handouts. In a traditional, in-person class, it is not surprising that the category that included lecture notes would be considered the most important learning material for the course. The in-person students surveyed split between SoftChalk activities and posted or linked videos as their next favorite activity with 64.4% choosing posted or linked videos as their first or second choice and 64.4% doing the same for SoftChalk. The bottom two ranked activities by in-person students were the assigned textbook (ranked 4 or 5 by 72.9% of students) and the publisher's interactivities (Cengage Aplia or MindTap), which were ranked 4 or 5 by 80.4% of the students who chose to rank these activities. The publisher resources were not a required element for the in-person courses which may explain their low ranking by modality.

The learning material with the largest proportion (40%) of students in online courses giving it a ranking of 1 was SoftChalk activities. The high ranking of SoftChalk activities among online students likely reflects the fact that these activities were designed to imitate the kind of in-class activities often missing in online courses, which may have made them especially valuable to online students. The next highest-ranked learning materials by online students were the assigned textbook and posted or linked videos. The course learning materials ranked lowest by online students were the publisher interactivities and other supplemental readings.

For hybrid students, the course learning material with the largest proportion (35.9%) of students giving it a number 1 ranking was the publisher interactives. However, hybrid students were clearly mixed on these publisher materials since a high proportion (23.1%) of students ranked them last. The next highest-ranked activities for hybrid students were split between SoftChalk activities and posted or linked videos. Other supplemental readings appear to be ranked fourth by hybrid students, while 42.5% of hybrid students ranked the assigned textbook in last place. While there were distinct variations across course modalities, these variations may reflect differences in the relative use of certain learning materials by differing instructors or the requirement for students to pay for access to these materials, even when embedded within their textbook purchase.

The survey also encouraged students to reply to an open-ended question about SoftChalk: "*My biggest takeaway from using the SoftChalk Activities is*_____." Sixty-three students responded to this question and the subsequent qualitative statements were reviewed and summarized. Students that commented "N/A" were treated the same as those who did not comment at all and removed from the final count. Most comments, approximately 82%, indicated a positive experience utilizing the SoftChalk exercises. While 18% of the comments were a mixed or negative review of the SoftChalk activities.

Examples of positive student comments include:

- "It helped me better prepare myself for exams and quizzes."
- "It was always helpful for preparing for exams in class."
- "The best way to grasp a concept is through interactive assignments."
- "SoftChalk is a great learning tool."
- "I liked how simple it was."
- "Very easy to use and helpful in understanding the topic."
- "I liked them overall. I think making it interactive will help with the learning process. As a gamer, I've always felt that interactivity has been underutilized in the education world and that making learning fun through computer interaction would be another way to help students."

Examples of mixed/negative feedback comments were:

- "Very confusing and didn't help me learn."
- "I really like the interactivity, but I would prefer if they were presented in a more appealing way."
- "It needs to be less boring."
- "It's fun but it just seems like busy work to me. It doesn't help me as much as what Aplia does."
- "They were easy to complete, however the crossword puzzles were very difficult to finished in a timely manner."

The word cloud analysis presented in Figure 15 is another method of reviewing the summary of student responses to the open-ended question and helps visualize the biggest takeaway from using SoftChalk activities. The word count frequency includes various forms of a single word. For example, the term "help" includes helpful, helped, and helping. The word with the highest frequency was help (36), followed by learn (22), and understand (15). Other terms in the top 10 were interactive, concept, material, easy, prepare, different, and useful. The words "fun" and "different" also appeared multiple times in the comments, suggesting that students appreciated the interactive approach. Overall, the word cloud suggests that the student takeaways from using SoftChalk activities were generally positive.

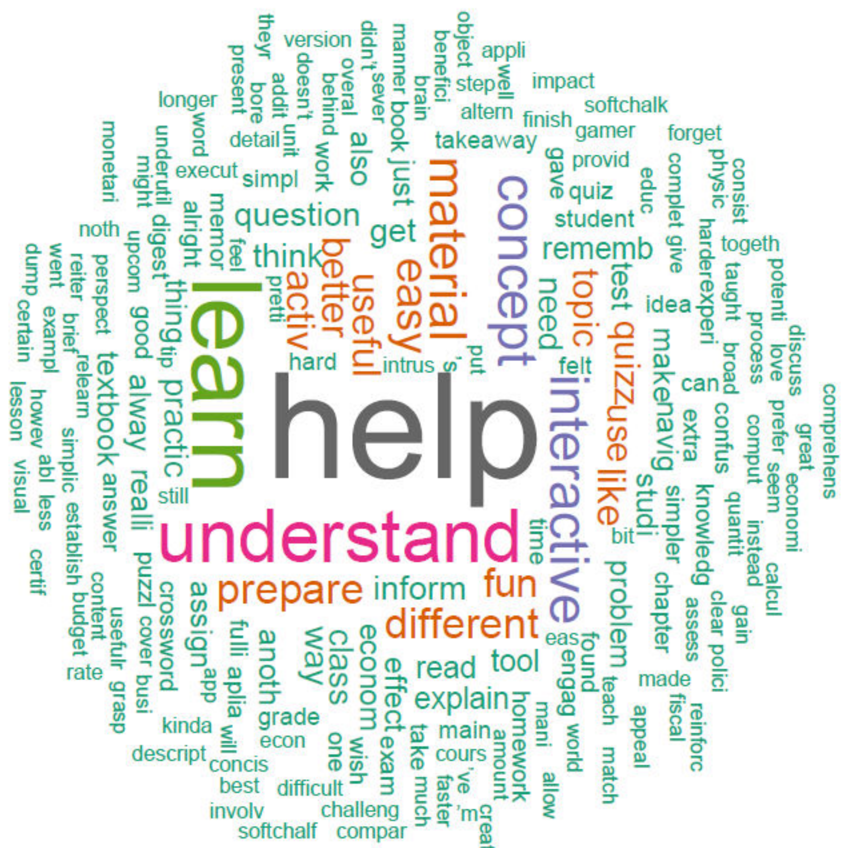

Figure 15 A word cloud analysis of student responses to the open-ended question.

9. Conclusion

SoftChalk interactive activities can be a useful supplement in helping students learn economic concepts. In this paper, we discussed how to develop a SoftChalk activity using an example lesson on fiscal policy. Types of SoftChalk learning exercises that can be integrated into an e-learning activity include quiz questions, sorting, matching with images, drag-and-drop activities, and crossword puzzles. Once cloud-based lessons are created in SoftChalk, they can be integrated directly into the course management system or shared with students using a website link. SoftChalk activities can also be used to supplement instruction in areas where students have displayed deficiencies, serving as a useful continuous improvement tool for assessment purposes.

This paper also summarizes the results of a survey of student perceptions of the effectiveness of SoftChalk activities. The results provide evidence that most students find the SoftChalk activities easy to navigate, help them better understand economic concepts, and become better prepared for tests and quizzes. This positive perception

of SoftChalk activities applied to students taking Principles of Macroeconomics courses at a regional university in three different modalities: in-person, online, or hybrid. Students were also asked to rank, from highest to lowest, the various types of SoftChalk activities. Activities that included quiz questions were ranked highest by students across all modalities. When compared to other course resources such as the assigned text, videos, and other supplementary materials such as lecture notes and readings, SoftChalk activities ranked the highest for online students. A high percentage, approximately 82%, of the open-ended student responses indicated that the SoftChalk activities were helpful in learning economic concepts. In general, the survey results provide evidence that interactive online activities, such as those that can be developed using SoftChalk, are appreciated by students and can contribute to student learning.

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Appendix A Selection of SoftChalk Activities Developed for Economics

1. Production Possibilities Frontier & Economic Growth
   Explores the PPF model and the concepts of opportunity costs, trade-offs, and economic growth.
   https://softchalkcloud.com/lesson/serve/w7Woc69GhHNd85/html
2. A Lesson on Money
   Focus on the evolution of money, its three basic functions, and ideal characteristics.
   https://softchalkcloud.com/lesson/serve/zi1EXUm0NdxTkV/html
3. The Money Multiplier
   A review of bank reserves, the simple money multiplier, and how the Fed uses these to expand or contract the supply of money. https://softchalkcloud.com/lesson/serve/75hCsEADeSojR1/html
4. Using the Simple Spending Multiplier
   Exploring the multiplier, aggregate expenditure line, and real GDP demanded.
   https://softchalkcloud.com/lesson/serve/3iIbq69dGUYy2g/html
5. Exchange Rate Tutorial
   This activity explores exchange rates, the appreciation and depreciation of a currency, and the impact on trade and travel. https://softchalkcloud.com/lesson/serve/drtRKpEMbQUCOv/html
6. Inflation & Interest Rates
   Discovering the relationship between inflation and interest rates.
   https://softchalkcloud.com/lesson/serve/2xGYTHZuASRKNv/html
7. Fiscal Policy Tools
   Review of each of the tools for fiscal policy and how they can be used to impact macroeconomic variables.
   https://softchalkcloud.com/lesson/serve/h39SPi0RXdQnFv/html
8. Monetary Policy Tools
   Understanding the Federal Reserve's tools to achieve the dual mandate of price stability and full employment. https://softchalkcloud.com/lesson/serve/khU4zonZ1wlegj/html
9. Monetary & Fiscal Policy Tools
   A review of the tools of both fiscal and monetary policy and how those might be used during recessionary and expansionary gaps. https://softchalkcloud.com/lesson/serve/GN28pEsaFmtdBq/html
10. Sources of Unemployment
    Defining four sources of unemployment. https://softchalkcloud.com/lesson/serve/Zqsy7TjfbCYS3c/html
11. Labor Force Statistics
    Understanding the composition of the labor force and how to calculate participation rates.
    https://softchalkcloud.com/lesson/serve/2fd1RmbcB3epjG/html
12. Perfect Competition
    Key characteristics of perfect competition, firms' short-run versus long-run decisions, profit maximization, and the long-run. https://softchalkcloud.com/lesson/serve/O3qYLp6MnFwz7h/html
13. The Production Possibilities Frontier & Opportunity Cost
    Exploration of the PPF model and illustration of firm's opportunity cost and production decisions.
    https://softchalkcloud.com/lesson/serve/a3HsBiolPGEVwC/html

Appendix B Student survey of perceptions about SoftChalk

You are invited to participate in a research study. The purpose of this disclosure is educational.

This research is intended to allow economic educators to observe and improve student comprehension of economic concepts developed through the use of SoftChalk, an interactive, activity-based, teaching tool. The results of the study will be used for improving economic education materials.

Your participation in this research study is voluntary and you may decide to stop at any time with no penalty. You are being asked to complete a survey online. All responses will be kept anonymous and will not be linked to you in any way. Your participation should not take more than 5 minutes.

You may skip any questions you do not want to answer. You can exit the online survey form if you want to stop completely.

Study Title: Using SoftChalk Exercises in Principles of Economics Courses

Risks: There are no foreseeable risks for participating in this research.

Benefits: The benefits which may reasonably be expected to result from this study are contributions to improving economic education for future students.

Future Research: De-identified data *with all identifying information removed* will be saved and may be shared with other researchers. You will not be told specific details about these future research studies as the researchers will not be able to identify you to contact you regarding future research.

Educational Disclosure and Informed Consent: Check box below.

Q1 (Required): I am at least 18 years old, have read the above information, my questions concerning this study have been answered, and provide my consent to participate under the terms above.

☐ I agree to take part in this study.
☐ I do not agree to take part in this study

You may print or save a copy of this consent for your records.

Demographics and Educational Status: Check boxes below each question.

Q2: I am currently a student classified as a:
☐ Dual-Enrolled High School & College
☐ College Freshman *(0-30 credit hours completed)*
☐ College Sophomore *(30-60 credit hours completed)*
☐ College Junior *(60-90 credit hours completed)*
☐ College Senior *(90+ credit hours completed)*
☐ Graduate Student

Q3: I describe myself as a:
☐ Man
☐ Woman
☐ Some Other Way
☐ Prefer Not to Answer

Q4: My economics professor for this course is:
[redacted for peer review]

Q5: My economics course was delivered:
☐ Fully In-Person
☐ Fully Online
☐ Hybrid (Some In-Person and Some Online)

SoftChalk Activities Feedback: Throughout the semester, you have completed a variety of assigned SoftChalk Activities. Some examples were: Opportunity Cost & the PPF, Tools of Monetary Policy, Exchange Rate, and more (6-12 total). Reflect on ALL of these activities when answering the questions below. Check boxes below each question.

Q6: The SoftChalk Activities helped me to understand economic concepts.
☐ Strongly Disagree
☐ Disagree
☐ Neutral
☐ Agree
☐ Strongly Agree

Q7: The SoftChalk Activities helped improve my preparation for quizzes and tests.
☐ Strongly Disagree
☐ Disagree
☐ Neutral
☐ Agree
☐ Strongly Agree

Q8: The SoftChalk Activities were simple to use and navigate.
☐ Strongly Disagree
☐ Disagree
☐ Neutral
☐ Agree
☐ Strongly Agree

Q9: I enjoyed completing the SoftChalk assignments.
☐ Strongly Disagree
☐ Disagree
☐ Neutral
☐ Agree
☐ Strongly Agree

Q10: I completed the following number of assigned SoftChalk Activities:
☐ All of Them
☐ Some of Them
☐ None of Them or I Don’t Remember Completing Any

Q11: The interactive approach of SoftChalk Activities was effective for learning.
☐ Strongly Disagree
☐ Disagree
☐ Neutral
☐ Agree
☐ Strongly Agree

Q12: I wish all of my economics courses included SoftChalk Activities to help me.

☐ Strongly Disagree
☐ Disagree
☐ Neutral
☐ Agree
☐ Strongly Agree

Q13 (ranking): Within each SoftChalk Activity, there were different types of interactive learning exercises. Rank the usefulness of following SoftChalk Activity learning exercises using a #1 for the most useful exercise and rank in descending order to #4 which was the least helpful for you.

__ Sorting or Drag-N-Drop: Sorting is moving a stack of items into various categories and Drag-N-Drop is dragging items in a list to match with a corresponding item.
__ Interactive Identification: Identification is scrolling through words or phrases until you find one with a matching answer to the associated image, Hot Spot Interactive is identifying a specific part of an image or graph, and Connections are making choices from a group of items.
__ Crossword Puzzles: Completing a puzzle by identifying the word associated with a given clue.
__ Quiz Questions: Quiz questions can include assorted styles, such as multiple choice, fill-in-the-blank, short answer, sentence completion, etc.

Q14 (ranking): Rank the following learning tools in order of their helpfulness to you in this course. Use a #1 to indicate the most helpful tool and rank in descending order to #5 which was the least helpful tool.

__ Assigned Textbook
__ Posted or Linked Videos
__ SoftChalk Activities
__ Other Supplemental Readings (Lecture Notes, Practice Problems, Reading Guides, Articles/Handouts)
__ Cengage Interactivities - Aplia or MindTap

Q15 (short answer): My biggest takeaway from using the SoftChalk Activities was: