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Chapter 14

How Instructors Can Help Students Embrace a Growth Mindset: The Importance of Applying Theory to Practice

Antje R. H. Graul and Ayse Sapci⁷

In today's educational system, it is more important than ever to set students up for success in their future careers and professional development. "I really liked how the classes were more than lectures," wrote one student in a recent course evaluation. But how can classes be more than "just" lectures? And how can a growth mindset be implemented to prepare students for their future careers? While many courses lend themselves well to teaching applicable skills, instructors assigned to theory-based courses often feel challenged to convey the importance of understanding the theory—or the usefulness of theoretical frameworks—to their students.

This chapter examines how teaching theory in higher education can achieve high learning outcomes and contribute to the development of practical skills in the context of developing important Habits of Mind for the student. This is of particular relevance as business leaders worldwide emphasize the importance of skills such as learning and adaptability. For example, Bill Gates, co-founder of Microsoft, challenges assumptions by stating, "Once you embrace unpleasant news not as negative but as evidence of a need for change, you aren't defeated by it. You're learning from it." Likewise, Jeff Bezos, chairman and founder of Amazon, emphasizes the importance of learning and re-learning through making mistakes. Bezos believes that "if you're not stubborn, you'll give up on experiments too soon. And if you're not flexible, you'll pound your head against the wall and you won't see a different solution to a problem you're trying to solve."

We start by reviewing the revised version of Bloom's Taxonomy (Anderson & Krathwohl, 2001), which distinguishes six cognitive, affective, and psychomotor domains: remember, understand, apply, analyze, evaluate, and create. We reflect on these domains to encourage instructors to rethink how engaging assignments can be designed. Next, we discuss the importance of developing a growth mindset in higher education and how application can help engage with three specific Habits of Mind—applying past knowledge to new situations, thinking independently, and thinking flexibly—by using new information to challenge the way students think. We draw on two specific classes, *Intermediate Macroeconomics* and *Sustainability Marketing*, taught in the Huntsman Business School, to illustrate how instructors can guide the application of theory to practice and how it plays an important role in shaping students' Habits of Mind. We conclude by reflecting on the importance of students' ability to learn, apply, adapt, and grow as a determining factor in their future careers and how our classes can help them achieve these abilities.

Review of Bloom's Taxonomy in the Context of Higher Education

Bloom's Taxonomy received considerable recognition, both nationally and internationally, after its introduction at United Nations Educational, Scientific, and Cultural Organization (UNESCO) and Organization for Economic Corporation and Development (OECD) seminars. After its inception, universities used the taxonomy broadly as a basis for curriculum analysis, test construction, and data summary (Lewy & Bathory, 1994). The taxonomy distinguishes six cognitive processes in attaining educational goals: remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001). While general education instructors have made great strides in incorporating Bloom's Taxonomy

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⁷ Both authors equally contributed to this chapter, including planning, writing, analyses, and discussion.

into their teaching, those teaching abstract-theory-based courses often feel challenged in how to move up Bloom's hierarchy of learning. For example, covering content in class that can be remembered and understood by students often seems more achievable to instructors than preparing students to successfully apply and analyze the covered material. To achieve the two highest pillars of Bloom's taxonomy, namely evaluating and creating, instructors feel challenged to obtain those goals, especially in a lecture type of format.

To better introduce the concept in a university context, we would like to illustrate an example from Krathwohl (2002), who explains how these six domains can be applied to the field of economics, specifically using terms from macroeconomics. In a 4000-level macroeconomics class, for instance, the first step of "remembering" would require students to recollect the definitions of aggregate supply and demand and the factors that might shift them. In the "understanding" step, students should be able to restate the idea of supply and demand in their own words and offer an example of the concept. Students can achieve the "applying" stage if they can apply the laws of aggregate demand and supply in different situations. The fourth cognitive stage, "analyzing," requires students to look at the pieces of the theory (for this theory, they would include specifics such as a demand curve, supply curve, prices, and production) and to understand the big picture by putting them together. Continuing the example, students should be able to use the law of aggregate demand and supply to explain what could happen to the aggregate economy if the Federal Reserve increases interest rates while Congress increases fiscal spending. The "evaluating" stage requires students to critique the idea in the theories based on their own views. Students can only achieve the final stage of "creating" if they recognize the parts of the supply and demand theory in other situations and develop a new theory to explain it. While reaching the "creating" level would be beyond the scope of a 4000-level macroeconomics course, in a graduate-level course, students can create a new model to explain the high inflation rate that we observe in the economy.

There are some creative examples in economics and business classes where researchers introduce strategies to implement Bloom's taxonomy. Deal and Hegde (2013), for instance, introduce a teaching method to get higher levels of learning by using a popular sitcom (*Seinfeld*) to explain the hardest concepts of economics. Zapalska et al. (2018) proposes an instructional framework using Bloom's Taxonomy to advance the critical thinking skills of students in business education. To quantify the importance of introducing Bloom's Taxonomy into higher learning in economics, Octoria et al. (2016) conducted a comprehensive experiment where they explored ways to improve the cognitive competencies of students. They found that prior to implementing Bloom's Taxonomy, 67% of the students had a final score of less than 85. After the treatment, 88% of the students earned a score of at least 85.

Despite the importance of the taxonomy in economics and business education, Hampton et al. (1993) find that 87% of the multiple-choice questions used in management and 65% used in marketing classes only measure the lower level of the taxonomy (knowledge) and do not achieve the higher steps of learning. In a more recent study, Watts and Schaur (2011) show that 83% of instruction in introductory economics classes is done through the traditional lecture format ("chalk and talk"), which is not considered student-centered. They further show that experiments, games, and simulations are almost never used in any economics classes, particularly in upper-level classes. While student-to-student discussions and cooperative learning are rare in all economics courses, instructor–student discussions only account for 49.5% of courses.

As business school instructors, we need to tap into the higher levels of learning more effectively to allow students to carry their knowledge to the future and increase important Habits of Mind, including applying past knowledge to new situations, thinking independently, and thinking flexibly. Particularly, the development of those important skills aligns with the higher levels of Bloom's Taxonomy. The higher-level skills of analyzing, evaluating, and creating require students to develop the Habits of Mind to apply the knowledge they have understood to a novel situation, thus taking achieved learning from the second level of Bloom's taxonomy to the higher level order. At the same time, this process asks students to not only apply past knowledge but think flexibly and independently. Thus, these key Habits of Mind are crucial to help students to further facilitate learning in the classroom.

Developing a Growth Mindset

In theory-driven business or economics classes, applying theory to practice is key to achieve higher level learning skills and student success. Not only do assignments that apply theory to practice allow students to feel more connected to the class material but they also build students' confidence in applying them to current developments and real-world situations. This can be viewed as a skill of metacognition that goes beyond the immediate applicability in these classes to students' everyday lives. Specifically, the extent to which students build such confidence and view their own intelligence as improvable has been demonstrated to be an important mindset that impacts academic success (Limeri et al., 2020). Thus, the development of a growth mindset can be viewed as a Habit of Mind for student success, as it fosters students' reflection and thinking about their thought processes.

The idea of developing a growth mindset entails the assumption that a student's mindset is constituted of specific beliefs and assumptions held by the individual (Sahagun et al., 2021), which in turn are important guides on how the individual views themself and approaches certain situations (Dweck, 2016). While growth mindset research is still in its infancy (Claro et al., 2016), research has started to understand the importance for a growth mindset pedagogy in higher education. Sahagun et al. (2021) suggest an important distinction based on mindset theory that consequently affects how students approach learning and progress in the classroom. It is proposed that students with a growth mindset can be seen as "individuals who believe attributes can be improved set goals measured by learning," whereas other students would, in contrast, be classified as "individuals who believe personal attributes are fixed and innate set goals measured by performance." While mindsets were found to develop and evolve during the first year of higher education studies (Limeri et al., 2020), it is important to note that the activation of the right mindset is a determining factor to set students up for academic and future success (Gollwitzer & Keller, 2016). A study involving a pretest-posttest control group design of 17 undergraduate sections supported this assumption. Undergraduates that were in sections featuring a growth-mindset teaching pedagogy increased their growth-mindset beliefs by 3.44%, and their fixed-mindset beliefs decreased by 3.48% (Sahagun et al., 2021).

Dweck (2014) suggests that the qualities of a growth mindset directly translate into business and marketing careers, where failure can occur. Consequently, a teaching approach that allows for trial and error as a learning tool and offers students the ability to improve and re-learn without fear of "being wrong" is key to building their growth mindset as a Habit of Mind (Dweck, 2008). A study conducted among 875 upper-level STEM students found that choosing the right pedagogy may even benefit students by creating a positive feedback loop between their mindset and their academic performance (Limeri et al., 2020). This growth mindset is particularly important to the younger generation of college students. Together, our students'

ability to learn, apply, adapt, and grow will be a determining factor in their academic and future careers. Those skills reflect the importance of three Habits of Mind: applying past knowledge to new situations, thinking independently, and thinking flexibly. Next, we will discuss the importance of application to achieve these Habits of Mind.

The Importance of Application in Higher Education

Together with the idea of developing a growth mindset comes the need to incorporate opportunities for application into the classroom. Applications and case studies allow students to make decisions like real-world scenarios in a safe environment, feel empowered to build confidence for decision making, and learn from errors made by themselves or others when applying theory to practice. Instructors of theory-driven classes, however, may struggle to incorporate a growth mindset as a Habit of Mind. Pühringer and Bäuerle (2019), for example, conducted a study to understand the view of economics students on what is missing in their education. The researchers found that while economics students enter the major with a great motivation to deal with real-world problems, they end up disappointed after introductory courses because of their heavy reliance on mathematical and theoretical methods. In other words, students are upset about the teaching methodologies in economics being based on remembering and understanding.

Economics, however, is not the only discipline that struggles to create real-world applications. This can be seen across multiple fields from the social sciences and the humanities and in STEM courses. Whitelegg and Parry (1999) argue that the lack of real-world connections to physics theory is one of the largest contributors to the decline of students pursuing physics education. While science and engineering classes may struggle to incorporate application in theory-loaden curriculums, some have the advantage of being able to integrate advanced technology. Specifically, augmented reality (AR) technologies gained momentum in science and engineering education. AR is the integration of the real world with digital work, creating realistic experiences for students. Wang et al. (2014) applied an AR-based simulation system to a collaborative inquiry-based learning activity in a science course and found that AR-based simulation can commit the students to the inquiry activity more thoroughly. Similarly, Hwang et al. (2016) show that a competitive gaming approach to support augmented reality is effective in learning. They conducted an experiment in an elementary school ecology course and found that this experiential learning through augmented reality can improve students' learning attitudes and their performance. AR-based simulations or games are particularly important to create an environment that allows students to make mistakes, overcome challenges, and learn from their experiences, which essentially creates a growth mindset that stimulates success.

Business school curriculum focuses on balancing the academic side of the business and the practitioner side, but it is evident that a challenge for instructors at business schools is the tension between academic rigor and real-world relevance. Business students must practice applying past knowledge to new situations, thinking independently, thinking about their thinking (metacognition), and thinking flexibly in a variety of scenarios. In their first century of existence, business schools were criticized for lacking academic rigor and were simply seen as trade schools, whereas in their second century, they have been seen as lacking relevance to the business world (Clinebell & Clinebell, 2008). Therefore, as highlighted by Clinebell and Clinebell (2008), business schools have been focusing on adding real-world experiences to their curricula.

McHann and Frost (2010) identify that a business's ability to implement and execute strategic plans is key to success, and business failure to execute strategies may arise from "the

ubiquitous incapacity of business professionals to overcome the gap between what they know and what they are actually able to do" (McHann & Frost, 2010; Pfeffer & Sutton, 2000). One example of how instructors aim to close this gap is by incorporating opportunities into a class that allows students to practice the application of theories through case studies from the "real world" to help theories come alive for students. It was found that across universities in the United States, case studies represent one of the most popular teaching methods in business schools to foster experiential learning (McCarthy & McCarthy, 2010) and to teach students the right Habits of Mind for their future careers.

In the following, we review two specific examples from the Huntsman Business School to evaluate how the application of theory can allow students to practice applying past knowledge to new situations, independent thinking, and flexible thinking while encouraging a growth mindset and the development of transferable skills.

Incorporating Application into the Business School Curriculum

To illustrate approaches to teaching Habits of Mind related to applying past knowledge to new situations, thinking independently, and thinking flexibly when using real-world scenarios, we first discuss *Intermediate Macroeconomics*. Despite the theoretical nature of the class, the instructor uses current news and integrates that information into an assignment. Students then use class material to analyze and judge the policies that are conducted or economic situations that arise from expected or unexpected events. Student feedback highlights the success of the assignment in demonstrating students' increased ability to think independently and flexibly as an important Habit of Mind.

Second, *Sustainability Marketing* is discussed. For this example, we narrate how a case study was used to nudge students to apply a theoretical framework covered in class to develop managerial strategies for successful stakeholder management. Putting students into the perspective of the main decision maker and allowing them to develop their own managerial strategies based on theory learned elevated their level of reflection and confidence in applying class material to the real world. This allowed students to engage with the important Habits of Mind of persisting and thinking independently.

Class Example 1: Intermediate Macroeconomics

Intermediate Macroeconomics is a core theory class required of all economics majors. While the class generally attracts juniors and seniors, recently there have been increasingly more sophomores, which creates diversity in students' exposure to economics. Students' interests in macroeconomics prior to taking the class are generally mixed since it is a required class rather than an elective. The class is offered every semester in the Economics and Finance Department of the Huntsman Business School.

Theory. Macroeconomics is the study of the economy at the aggregate level. While microeconomists study the supply and demand for specific goods, macroeconomists use aggregate demand and aggregate supply to study the determination of national income, employment, inflation, and interest rates. Macroeconomists construct theoretical models to explain what we observe in the data. In this class, students specifically learn the theory of labor market, asset market, and goods market as well as general equilibrium models such as IS-LM and AD-AS frameworks to study the functioning of the aggregate economy.

Application. While Intermediate Macroeconomics is naturally theory-heavy, the instructor introduced a "news report" assignment to reinforce the connection between the real world and macroeconomic theory. For this assignment, students analyze recent news using the theory they learn in class and write a report about them biweekly. For instance, one potential report could be about explaining the reasons for the current high inflation by analyzing each individual shock (such as supply disruptions observed during the pandemic, stimulus checks) using the general equilibrium models learned in class.

Implications. This news report assignment helps achieve higher metacognitive learning strategies based on the Habits of Mind of thinking independently and flexibly in multiple ways. First, students are required to remember the macroeconomic concepts and understand them to be able to pick an event and match it to the appropriate topic. Second, they not only directly apply the theory by analyzing real-world events but also evaluate and critique what they find using their own views. The last step in the taxonomy, create, would not be feasible to achieve in a class like Intermediate Macroeconomics, since students are not equipped to create new theories. However, they can match multiple pieces of existing theory to create a coherent explanation of complicated economic events.

This assignment also allows students to develop a growth mindset based on further expanding their Habits of Mind. First and foremost, students apply past knowledge to new situations as they need to find a new economic event that was not covered in class to analyze. Second, students need to persist to complete the analysis, as it is often hard to find the right tool to explain the economic event. Students may need to try a few approaches to land on the right tool. They also need to think flexibly, because economic events can be buried under political interests and may be hard to interpret given students' own beliefs. This assignment also allows students to question and pose problems by forcing them to think deeply. Students are required to question and criticize the economic policies that they are analyzing, while they think and communicate with clarity and precision in their reports. All these Habits of Mind encourage the development of soft skills that are essential for the success of students' future careers.

Student Feedback. The assignment was introduced in spring 2019, which has allowed the instructor the opportunity to compare student evaluations before the introduction of the assignment in fall 2018 and after its introduction in spring 2019. While the students had overwhelmingly positive evaluations of the class in fall 2018, they rarely mention the application of theory to the real world as a strength of the class. For instance, one student mentioned the following: "I thought that Professor Sapci did a great job of teaching the material. She gave great examples and explained the coursework in a simple yet effective manner." Another student wrote, "I feel like Prof. Sapci was very focused on answering questions and helping students succeed. She used a lot of examples in class teaching to help us understand how to apply models and theories. She wanted everyone to succeed."

After the introduction of the news report in spring 2019, students' perspectives in evaluations completely changed and focused on how much they loved the application aspect of the theory. To provide context, in fall 2018, only 17% of students mentioned the application of theory as one of the strengths of the course. After the introduction of the news report assignment, this ratio increased to 64%. Students also emphasized the news reports assignment in their evaluations. For instance, one student wrote, "News reports are great!" Another mentioned that "Professor Sapci made this class very interesting, she brought real-world examples for us to apply the principles that we were learning...The news reports were exceptional as it gave a really opportunity to apply what we had learned." Another student penned: "I really liked the news

reports. They made the material real and applicable. I also liked the teaching style of always relating theory back to events or applying the theory to the real world."

After emphasizing application, some students mentioned metacognitive and soft skills that they acquired from the class. For instance, one student wrote, "I learned a lot and my level of confidence has grown. I was also comfortable participating in the class." And another student declared:

Professor Sapci has been my favorite professor that I've taken a class from in my three years at USU. She has made learning these complex ideas very manageable and has really developed my love of economics. I came into this class not sure what I wanted to do with my life, but now I know that I want to be an economist. I can't overstate how positive an impact Professor Sapci has had on my learning experience. I wasn't sure if I wanted to continue pursuing higher education, but she has helped me to understand that this is the best path for me.

As these student evaluations show, incorporating real-life applications of theory into the classroom not only helps students achieve a higher learning level in Bloom's Taxonomy but also helps them gain important Habits of Mind that they will carry to the future.

Class Example 2: Sustainability Marketing

Background. The instructor teaches *Sustainability Marketing* in the Business School regularly. The course targets students who are passionate about understanding and applying key marketing concepts to leading sustainability topics, including green marketing, sustainable transportation, collaborative consumption, and clean energy.

Theory. In the context of sustainability marketing, successful stakeholder management is crucial from a business perspective. Thus, a theoretical framework for stakeholder management is introduced in class. The framework incorporates an approach to classifying stakeholders based on their level of power, urgency, and legitimacy in the context of a given situation. The theory suggests that any given stakeholder can entail high or low levels of power, urgency, and legitimacy simultaneously. Based on this approach, stakeholders can be classified into nine different groups. The theoretical classification represents the basis for selecting the appropriate management strategy to address the stakeholders' needs in the next step.

Application. Sustainability marketing is a dynamic and demanding environment for corporations to operate in. The case study application involves a group work project on a selected case study to identify relevant stakeholders for the corporation and to analyze their role and relationship to the corporation about the theoretical principles and frameworks reviewed in class. This specific assignment is implemented with the goal to have students engage with the two important Habits of Mind—persisting and thinking independently. Specifically, the Harvard Business Publishing case study "Tender Greens: Can They Keep the 'Green' Promise in Beef Sourcing?" is used. The purpose of the stakeholder strategy project is to give students practical experience with identifying relevant stakeholders and classifying their importance. The publisher identifies this as an important learning objective within the instructor materials, stating that students will "understand how decisions can be made when multiple stakeholders are involved, each with their own unique perspective, and how a company can balance and assign relative importance to different stakeholder groups when making decisions." Through the correct assessment of the influence of stakeholder needs in a given situation, corporations can gain a competitive advantage in the marketplace by successfully managing stakeholders. By completing

the assignment, students develop higher level learning skills that are transferrable to their future careers.

Implications. This case study assignment asks students to think independently and practice persistence by identifying ways in which they can apply the theoretical framework covered in class to a real-world scenario that is presented in the Harvard Business Publishing case study. It is important to engage with Habits of Mind to promote equity, to practice the transfer of academic skills, and to teach students independence by focusing on skills such as critical thinking and building confidence.

Student feedback. When asked what aspects of the teaching or content of this course students felt were especially good, they named "the case studies and overviews" and perceived the opportunity of applying theory to practice as positive. It seems that students enjoyed the varying instructional methods when stating, "The material is very interesting. Loved the readings and cases" or "I really liked how the classes were more than lectures." Specifically, students enjoyed discussing varying opinions among their group members. Some students mentioned that they would have appreciated even more time with the case study and discussion in their group (e.g., "It was hard to coordinate everyone's schedules to turnaround and present a group project with so many people"). Thus, instructors might want to make additional space for in-group discussions in class as well as to reduce group sizes to a minimum in the future.

Overall, course evaluations suggest that the case study methods helped students understand the importance and relevance of the material covered in class. A positive side effect was that the case study application allowed students to think about careers in the field, as evidenced in the following qualitative comment: "This course helped me realize that there are more places where I can seek out employment that allow me to exercise my degree while working towards the betterment of the environment and I am very grateful for this class because of this." The ability to open students' minds regarding the applicability of their learning to various real-life scenarios and work environments is a unique opportunity that benefits not only their growth mindset but also their employability.

Developing Skills Transferrable to the Job Market

When reviewing student feedback on both classes, we find evidence for the assumption that our assignments helped engage students with important Habits of Mind. Importantly, students were able to practice the transfer of academic skills to real-world scenarios by thinking interdependently and flexibly and by applying past knowledge to new situations. This experience not only helps students develop a growth mindset but it also builds confidence in their abilities to apply the learned material. Key Habits of Mind are equally important for the students' future success on the job market. Regarding sustainability, for example, Holdsworth and Sandri (2021) suggest that "part of teaching sustainability involves also proving its relevance and legitimacy as a subject in a course of study" (p. 2) and emphasizing that a learning process that focuses on reflection and problem solving is key to achieving this, demonstrating the importance of a Habits of Mind teaching approach.

Prior literature supports this assumption. Bennett (2002) examined 1,000 job advertisements in marketing, general management, finance, and human resource management to find frequently listed transferable skills of graduate job applicants. Communication, information technology (IT), organization, teamwork, interpersonal, motivation, analytical, self-confidence, and numerical skills are specified in over 20% of those advertisements. The study further found that while general management jobs focus more on initiative, motivation, and communication

skills, marketing adds IT and presentation skills and management adds entrepreneurship to the list. Finance jobs are the only ones that insist on numerical and IT skills.

Conclusion

In theory-driven business and economics classes, applying theory to practice is key to achieving higher level learning. We engage students in practicing important Habits of Mind, including applying past knowledge to new situations and interdependent and flexible thinking through real-world case studies and assignments. While the goal of introducing our suggested assignments is to use higher education stages in Bloom's Taxonomy, the skills students develop can be seen as a skill of metacognition that goes beyond just the immediate applicability in these classes to students' everyday lives and prepares them for success in the future job market. Our assignments can promote teamwork, being committed to work, communication, learning, adaptability to changes, continuous improvement, organization, and self-confidence skills, along with analytical and numerical skills. Together, students who build on those skills become confident, and they often view their own intelligence as improvable, a demonstrated mindset that impacts academic success (Limeri et al., 2020).

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