Hybrid Instruction: A Study into Usage of Lecture and Student-Centered Learning During Class Time

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Abstract

With declining confidence in higher education, it is timely to consider the optimization of students' class time experience. This study argues that class time should be devoted to development of student innovative skill. The authors' direct experience is blended with theory and findings from existing research to propose an innovative approach that, rather than being mutually exclusive, indicates the complementarity of lecture and student-centered pedagogies. In this hybrid format lectures provide the delivery of old and new knowledge, while the student-centered approach provides application of that information through class discussion and short, in-class assignments. The environment motivating this research is mainland China, with English Language Learner (ELL) Chinese students, with the study's aim being their cognitive, intellectual and second language development. The objective of this hybrid approach is the development of enhanced 'value add' to students' education, with a companion aim in the maintenance of tertiary institution and teaching relevance.

Keywords: lecture, student-centered, engagement, short assessment, blended instruction

Introduction

Higher education is at a crossroads. There is declining public confidence in inter alia the United States and Australia in higher education.ⁱ Ninety-one percent of those polled in the U.S. state that students who attend higher education institutions should make more than high school graduates, and 83% state that these jobs should enable them to pay off their loans.ⁱⁱ Three quarters of University trustees are concerned about the future of higher education,ⁱⁱⁱ and cite student debt, tuition costs, and job prospects as top concerns of the

public. iv In Australia, while 78.8% have a high level of confidence in universities, only 60% 'agreed or strongly agreed that universities were teaching students the important things they need to know.'v

Declining public confidence and the concern of university leadership establish the need for innovation in education. To meet these stakeholder concerns this paper proposes a hybrid instructional form that both conveys knowledge and develops skills demanded in the workforce. This can be done through blending lecture and student-centered instructional concepts during class time. Passive inputs through course knowledge are imparted to the student through lecture, and active inputs through class discussion and brief, in-class assignments are practiced through student-centered engagement. Use of different instructional forms and innovation in these assignments can instill in students an array of skills needed for professional and managerial roles in the workforce.

With increased attention given toward the student-centered teaching model, vi it is reasonable to assume that Western universities and their global joint ventures have increasingly embraced the 'student-centered' model of teaching. This model is defined as 'an approach to learning in which learners choose not only what to study but also how and why, vii and contrasted viii to the lecture model in five key areas: the balance of power in the class room between student and teacher, the function of course content, the role of the instructor relative to the role of the student, the responsibility for learning, and purpose and processes of evaluation. The choice of learning environment is important, as the learning environment is a strong predictor of student attitudes toward the subject matter and their learning outcomes. This is for good reason, as the promotion of learning through student engagement positively affects student self-efficacy beliefs, vi which has a positive effect on student performance. viii

However, the place of content alongside the student-centered teaching model should be considered. For example, is it open to ask if a student can learn any subject without explanation of relevant concepts? Lecture and student-centered learning are not mutually exclusive but are complements, and of the five areas of contrast between the two models this paper defines the instructor as both a purveyor of knowledge and facilitator of intellectual development, thereby emphasizing the dual responsibility of the instructor and student.

An understanding of course content can be accomplished through a lecture-style format, led by the instructor, and application of that content can be accomplished through active, student-centered engagement, guided by the instructor but ultimately led by the student. While contemporary research frames the debate as a choice between active, student-centered engagement and the traditional lecture, xiii this paper proposes using both during class time. Content delivery and explanation of the content by the instructor is necessary for student understanding of the material, providing a scaffolding that allows students to apply their understanding to multi-faceted, real-world problems.

Figure 1

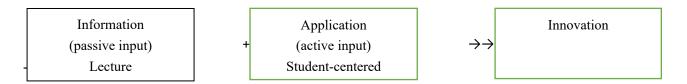


Figure 1: Passive input in absorption of information and active input in student-centered application

In each class give students opportunities to develop innovative skill, which is critical for leadership upon graduation.

Why a hybrid model?

A student's education should be a personal endeavor, as the student takes initiative, for example, to ask for feedback after in-class assignments are graded. In the classroom, however, student initiative should be encouraged by the instructor, with 'the curriculum...designed around students to motivate them and recognize their prior knowledge, skills, attitudes, and values.'xiv

Both lectures and class discussion-based methods are important because innovation through usage of information by the student must be both modeled and applied. For English Language Learners (ELLs), it is highly recommended that literacy skills of reading and writing be taught in an integrated manner. *v* Lectures provide students the opportunity to listen to an expert convey knowledge, information and ideas efficiently, *v*i* and model the logic of the concept. However, real-world learning involves both passive and active input. *x*v*ii* In the education context passive input comes from a balance of information received from the lecture, while active input comes through class discussion and in-class assignments where students analyze and generate information by themselves. From discussion students practice empiricism, *v*iii* where information from lecture is augmented by their sensory experience, *x*ix* and shaped by their active engagement into course concepts. Patterned data shaped by sensory experience**x* pass through limbic system brain structures that have 'a strong influence on the formation of memory.'*x*ii* Through class discussion students are motivated to exhibit their acumen in front of their peers; in formulating quick answers they sharpen their critical thinking skills. *x*ii* Learning comes with understanding, which is accomplished by giving the student the opportunity to think and reason. *x*iii*

Materials and Methods

The following discussion describes a normal class session where both lecture and student-centered learning concepts are used. The class featured is a business law course taught in English in China, to 95 Chinese students. The course is designed to align with program objectives and learning goals defined in the course syllabus, and each class session is designed to develop the higher order thinking skills in Bloom's Taxonomy. Classes emphasize transparency in course information and expectations, and follow a simple, structured routine of announcements, lecture, student-centered discussion and in-class assignment. During lecture content from previous classes is recited, connection is made in the transition between previous classes and the current class, and new content is presented. Student-centered learning is achieved first

through class discussion between the instructor and student, and then through in-class assignments that are short, low-point, with questions that are open-ended and straightforward. Finally, the paper connects the skills developed during class to skills demanded in the workforce, considers work-load implications for faculty, and mentions future avenues for research.

Results

Theory and findings of existing research support the use of this hybrid lecture/student centered model. The most important factor in student learning is the teacher. Instructor transparency in due dates, course requirements and rationale for an assignment creates a successful learning environment, and simple, structured routine both acclimates students to skills development within context and enhances student sensory experience within the classroom. Reciting old content improves long-term memory, and memorization of information enhances cognitive development, especially for ELLs. The transition from one set of content to the next improves brain activity, and ingrains language information in ELLs. The introduction of new information improves brain adaptability and note-taking of new information improves student learning, which is correlated with exam performance.

Student-centered, active learning encourages the student to ask questions, reflect, and ultimately find truth. Methods of instructor-student discussion such as the Socratic method, if utilized correctly, foster student creativity through experimenting with ideas, increasing difficulty in questions and topics raised, and assessment of thought. Learners at all levels improve their ability to innovate. Short, low point in-class assignments give students the incentive to take notes and review, take risks with answers, improve second language development and direct learning strategies, and for the instructor provides real-time insight into student learning gaps and with frequency of grades a consistent feedback between instructor and student. The different assignment types stimulate brain development and problem-solving skills.

Discussion

Before Class – Implement hybrid model through course planning

The class session must be planned, as innovation is an integrated process from beginning to end, as students pay attention to presentation of course information and new material, perceive connections to older material, process this information and make connections during class discussion, then apply the concepts during inclass assignments.^{xxv} The structure of class, in every factor from note taking to use of the course material, aligns with course objectives and student learning outcomes. From the course syllabus, the pertinent course objectives are:

- Define or describe key concepts, specific facts, and critical issues of U.S. law, and correctly apply
 this information to examples;
- Use conceptual models and theories to analyze legal events and decisions;
- Apply legal science methods in making convincing arguments supported by evidence and reasoning.

Student learning outcomes are:

- 1) design a business idea and apply the principles of the course to that business
- 2) gain introductory knowledge into the impact of Chinese and Western history on law
- 3) understand the features and applicability of civil law and common law systems,
- 4) gain introductory understanding of the impact of constitutional law on commerce and business property,
- 5) choose the business form that best fits the business,
- 6) study and draft internal accounting principles based upon Chinese and Western accounting law,
- 7) understand legal principles of contracts and draft a contract for the business, and
- 8) analyze the advantages and disadvantages of doing business online, within the context of the law.

These program objectives and student learning outcomes require both implementation and application of knowledge according to the thinking skills identified in Bloom's Taxonomy. **Taxonomy.** Classes proceed through each of these skills, as through the restatement** of facts from previous classes students remember basic components. Understanding develops as students explain the ideas and concepts upon which these facts are based. Application occurs when, for example, students choose a business form. Analysis occurs when they compare the tax advantages of each business form. Evaluation occurs when they choose their business form, and after comparing the advantages and disadvantages explain why they chose their form. Creation occurs when they create the context upon which their analysis is based, create their business idea, and apply legal issues such as the employer-independent contractor distinction to factors they chose from the Internal Revenue Service (IRS) test.

With ELLs instructors should incorporate the principles of Second Language Acquisition^{xxviii} into teaching strategies used and course design:

Principle 1: Ensure that learners develop both a rich repertoire of formulaic expressions and rule-based competence.

Principle 2: Ensure that ELL's focus predominantly on meaning

Principle 5: Consider the learner's built-in syllabus^{xxix}

Principle 6: Utilize extensive second language input

Principle 7: Provide opportunities for output^{xxx}

Principle 8: Provide opportunities to interact in the second language

Principle 9: Consider individual differences in learners. xxxi

Strategy used to accomplish goals, objectives, and develop thinking skills: Transparency

With the identification of goals, objectives, and the skills to be developed, the next question is how? Choice of strategy by the instructor is important, as it defines the steps and routines used by the instructor to help students obtain, store, retrieve, and use information. A clearly defined, daily routine from the instructor provides the student a consistent model on how to receive and use information, and from routine students act, behave, take steps toward, and through practice develop their skills to the context provided.

A clearly defined, daily routine is accomplished through transparency by the instructor, which emphasizes honest communication, visibility and accessibility of information, with requirements and expectations clearly understood. In teaching young adults it is important to explain to them why they are doing these assignments. Information, course expectations and course material are conveyed by the instructor through 'carefully orchestrated visible and audible behaviors.' Transparency includes not only what the instructor says or writes, but also the instructor's body language, movement in the classroom, enthusiasm about the material, and eye contact, all of which are significant factors in conveying meaning.

The classroom atmosphere is based upon the teacher, as the most important factor affecting student learning is the teacher. There is a positive relationship between quality of instructor and student achievement, as in classes of teachers classified as most effective students gain about 52 percentile points in their achievement over a year's time, while students in classes of teachers classified as least effective gain about 14 percentile points over the same time. XXXVIII Built through planning and transparency the classroom atmosphere prepares the English-only environment, and of crucial importance to students learning in a nonnative language focuses their energies on engagement. Students reflect the atmosphere created by the teacher, and through transparency, respect, and mutual admiration the class takes on an orderly, problem-solving approach. XXXIIX

First, the normal class day begins through simple, structured routine

The class day begins. A consistent, simple, and structured routine is designed to utilize the student's senses, as use of the sensory organs is the only way students understand and learn about the world outside themselves.^{x1} Class opens with a simple greeting and smile from the instructor, who asks the students if they are having a good day. This lighthearted question engages the students, increases their comfort level, and prepares them for the English-speaking environment.

Next, the instructor reads announcements that are written on the blackboard. The use of multiple formats, such as students reading the announcements written on the board and listening to them repeated by the instructor, has a positive association with learning. Announcements set the stage, as for the remainder of class written text is structured, as PowerPoint slides and blackboard notes are written in outline form, with headings, subheadings, and their corresponding explanations. Explanations are given at a slow, methodical pace, giving students time to listen and reflect. This prevents confusion, and whether the student is learning in their second language or not it is necessary to remove as much confusion as possible.

Second, content is presented

Recapitulation of old content

Students are now prepared for course content, and PowerPoint slides are displayed on the class projector. In setting a knowledge basis for lecture students recite information from the previous class. Memorization that comes from reciting old information gives the student the necessary information, that combined with new content later provides the opportunity to make connections and determine patterns across course topics. Frequent reference to information improves long-term memory, which allows the student to develop a deep

understanding of the material, and engage in more powerful analysis. xlii For the language learner memorization is a helpful strategy as it 'provides the learner linguistic data,..., enhances association in memory, and causes cognitive development as a learning strategy. Yaliii Questions are asked to the class in general and to specific students, which brings students into the content, as they are either interested in the subject or know they could possibly be called to answer.

Transition from previous content to new content

Transitions from previous^{xliv} to new content include questions from the instructor which link the classes, so that students make connections and determine patterns in the information. Transitions reinforce the learning process, as 'the practice of learning and applying information to new situations is a multifaceted process of making connections,' as 'applying conceptual understanding from one setting to the next requires students to utilize the brain's capacity to build new neural networks.' In answering these questions the student performs basic analysis and connects information. For example, in covering partnerships last class to covering corporations in the current class the instructor asks how each are taxed. This links both classes and piques students' interest, as the students in the class are accounting majors. After this transition ELLs have read, listened, and possibly spoken in English, without any reliance on the students' awareness that they have done this. XIVIII

New content

Next, new content is displayed through PowerPoint slides. Content is simple and straightforward, designed to introduce a starting point for analysis, which the instructor explains in more detail. The introduction of new content is 'compatible with the brain's natural processes [as it] adapts and adjusts when it encounters new information.'xlviii Students take notes by listening to the instructor's explanations and reading the instructor's notes written on the board. Whether taking notes from lectures or from reading, note-taking and review of notes improves student learning, xlix and the quantity of notes is highly correlated with exam performance.¹ The use of electronic devices is banned, so students are encouraged to take notes using a writing utensil and paper. While laptop note takers record more verbatim notes and record more notes in general, those who write in longhand form study, organize, and elaborate upon ideas better.¹ⁱ

Third, student-centered learning begins through class discussion

Now that content is delivered and explained student-centered learning begins through class discussion, where content is analyzed. Content was presented systematically and reinforced through reading, listening, and writing forms. Now, students take the information to answer questions of increasing difficulty under timed circumstances in front of their peers.

This method, the Socratic method, is a process in which the teacher guides the student to ask questions, reflect on information, and draw conclusions for the purpose of finding truth. It is a powerful tool that can be used to draw out student thoughts and analysis, but if used incorrectly discourages student input. The student and instructor are both responsible; while the student must actively listen, as they may be called upon, the instructor must be careful to both challenge the student and maintain their enthusiasm. If utilized

correctly the Socratic method generates thought and 'fosters creativity through freedom of expression, experimentation, scaffolding of ideas, and reconstruction of thought.'

Take for example this dialogue on a class topic, business forms:

Instructor: "Student A, in choosing a business form which is one of the three factors we discussed?"

Student A: "Authority."

I: "Why do you mention this factor?"

A: "Because I want to be in control."

I: "So, this is the most important factor to you?"

A: "Yes."

I: "More important than financing? Why?"

A: "Yes, because I believe that it is most important to be in control, and I do believe I can find the money through personal financing or a loan."

I: "So, you want to be in control? Full control? If so, which form is best for you?"

A: "Yes, and sole proprietorship is best."

I: "What is the responsibility of the sole proprietor if he goes bankrupt?"

A: Unlimited liability.

I: What do you mean? What assets could be taken?

A: His personal and business assets.

I: Which personal assets?

A: His home, car, anything he has.

This dialogue is structured so that students develop a greater understanding of the material through critical thinking. They take a simple position, consider multiple issues, explain their reasoning, weigh the importance of those factors, and either reaffirm or change their position. The practice of critical thinking is modeled, as the instructor integrates new and old content, has students recite simple facts, and asks simple questions, gives feedback during the dialogue, and fades support^{liv} as layers of complexity are added to the material covered.^{lv} The student is asked which factor is most important in choosing a business form, why is their choice most important, and on this basis decides which business form is best. Next, the student is asked about other factors in the choice of business form, ^{lvi} being legal responsibility, tax consequences, and financing. Finally, the student is asked to weigh authority with responsibility. The dialogue ends with the implied question if the student is comfortable with the choice of sole proprietorship as the business form, even if it means taking unlimited liability.

The ability of the student to understand the material, apply it to multiple contexts, compare and contrast business forms (for example), weigh the factors, and design the answer determines their grade. Ivii Movement from memorization and understanding to the higher-order thinking skills of application, comparison and contrast, weighing, and design are necessary in the development of all learners, as both high and low achieving students make significant gains in achievement through development of these

skills. With the content foundation students have center stage, as they recite simple facts, give their opinion, and deal with layers of complexity that lead to a choice of business form.

Fourth, student-centered opportunity for innovation occurs through in-class assignments

Students take these passive and active inputs to complete brief, in-class, short cycle assignments at the end of class. lix These are low pointlx assignments that serve several purposes:

- First, given that there may be an in-class assignment students have the incentive to review their notes. Students take the notes longhand and review their notes from the current and previous classes. By reviewing and recording notes longhand students achieve more than laptop notetakers, and helps the student improve listening, comprehension of the material, and retention of concepts.
- Second, results from the university English proficiency exam for the incoming freshmen class show that compared to writing and speaking listening listening is by far the lowest-performing portion. To complete these assignments successfully, students must listen to the instructor and classmates and participate.
- Third, these students may take as many as nine courses in a semester, so having in-class assignments decreases their out of class workload. As stated, these assignments are low point, which relieves stress and gives the students opportunities to improve their grades.
- Fourth, in-class assignment grades are posted in installments, lxiv and the scores establish a benchmark of their performance. This process also establishes feedback and a continuous learning opportunity between instructor and student, where through tracking scores students and instructor assess their progress in writing, analysis, and understanding of the course concepts. Feedback methods include giving extra credit for exceptional answers, praising students for their work, telling students why their answers are optimal or less than optimal, and giving suggestions on how they can improve.
- Fifth, these assignments are short and faster to grade, which makes it easier for the instructor to identify student writing and analytical gaps throughout the semester, provides insight into how course content can be adjusted, and in possible research applications cultivate objective, verifiable data to assess student conceptual understanding and English proficiency.
- Sixth, critical thinking used in these in-class assignments builds second language development. Proficiency improves through development of analytical skill, which involves direct and indirect strategies^{lxx} which the teacher can use to support second language development.
- Seventh, the student develops direct learning strategies, such as memory strategies, where student stores and retrieves new information, cognitive strategies applied by learners to better understand and produce the target language through summarizing and reasoning exercises, and compensatory strategies to address knowledge difficulties in the target language, such as identifying meaning from context. lxxi
- Eighth, the student develops indirect learning strategies, such as meta-cognitive strategies where students control their own cognition, affective strategies that emphasize motivation and selfencouragement, and social strategies that emphasize use of course knowledge in interacting with classmates.^{lxxii}

Assignment types, parameters and open-ended questions

Changing assignment types, questions, time and concepts covered is vital to brain growth, as 'an environment that has mostly predictable or repetitive stimuli fosters boredom in the brain, making it turn inward for new and novel stimuli. While students know the possible assignment types and possible content covered, they do not know the exact assignment type, question, completion time, or concept that will be assessed. Strong written and oral communication skills, especially within ever-changing and unpredictable circumstances, are recognized as necessary for success by employers, who view colleges and universities as responsible for their development. The unpredictability of the assignment type and question asked encourages not only the retention of facts from lecture, but also meaningful learning in transfer of that knowledge to facilitate understanding of the new content and solve new problems. Students must complete these assignments within timed limits that, depending on the difficulty, range from 10-20 minutes.

Word limits are given, which imparts to students the importance of word choice. This makes grading more convenient, but in regulating their verbosity the student practices meta-cognition. The student looks at their work and decides how they can make their answer more concise. When students assess their own thought process, they gain confidence in their ability to learn, lxxvi and when they do so regularly through these assignments, they design strategies to communicate. Students learn that words are tools that can be used to express meaning to the listener or reader.

Questions are straightforward, with clear structure and vocabulary that are discussed in class and moderately push student proficiency. Examples of these assignments include:

- Explain jurisdiction in your own words.
- Summarize Monday's class to your partner.
- In your opinion how can contracts reduce misinterpretations between the employer and worker?

These questions are short, simply worded and, as in the dialogue above, proceed to increasing levels of difficulty, and draw upon both old and new knowledge. Through the open-ended nature of the question the student reflects on the concept and how they will answer. Reflection draws upon the student's thoughts about the concepts, and in review of the knowledge gives them a canvas to express their understanding. The student's answer involves the two highest steps in Bloom's Taxonomy; through evaluation the student selects the most important information to provide from lecture and class discussion, and through innovation crafts their best method to present the answer and content.

In-class assignment types

Different assignment types test different skills and promote brain development, as 'the brain requires stimulation, novelty, and problem-solving opportunities.' lxxvii

• Through summaries students state the main ideas of the material in their own words. It is objective in tone, meaning the student does not include any of their own opinions or analysis into the work. lxxviii

- Multiple choice questions help students recall course content, lxxix and test a student's analytical ability, use of their notes and PowerPoint slides, and attentiveness in class.
- Notetaking assignments test student comprehension skills and ability to identify important ideas. Students divide into teams; while one student gives a verbal summary of the course material, the other student listens, takes notes, explains which subjects their partner missed, and describes the importance of the missed concepts. Then they switch roles. Giving students the opportunity to work together allows them to exchange ideas, answer questions, and teach each other. lxxx
- A distilled version of the Socratic process through short answer questions: student answers a simple question based on the course material, explains why they chose that answer, any trade-offs in making that choice, and based upon that answer and their preferences draws a conclusion.

Conclusions

Within the context of an 'evolving socio-economic environment' the European Commission for Education and Training states that people must be equipped with a set of literacy, numeracy, and digital competencies. 'Critical thinking, creativity, and ability to work as a team are equally important to build sustainable careers and become active citizens.' In a 2018 global study employers identified problem solving, teamwork, communication, adaptability, and interpersonal skills as the most important workplace skills. lxxxii

Innovation is the desired product of this proposed model because it builds within the student leadership skills demanded of professionals and managers. Leadership comes from a strong set of beliefs grounded in knowledge, and a vision designed from this knowledge and beliefs. The hybrid model encourages leadership grounded in knowledge and a self-created vision, as lecture provides the passive inputs needed to supply students that knowledge, and class discussion and in-class assignments provide the active inputs students need to create answers and direction. This approach is consistent with employer demands of professionals, as students analyze situations, conduct research, develop concepts, theories and methods, and apply existing knowledge to problem solving, skills demanded of professionals. Ixxxiv For managers, employers 'plan, direct, coordinate, and evaluate the overall activities of enterprises..., and formulate...their policies, laws, rules, and regulations.'Ixxxv

Are college programs developing these skills needed by employers? College boards and presidents are aware lxxxvi that public confidence in United States higher education has declined since 2015, lxxxvii and that families will scrutinize future options for their children. Innovative instructional forms and skills-based development should be embraced, and the effectiveness of each assessed, as community colleges and four-year universities must compete with vocational and technical schools, the workforce, and each other for student enrollment.

One implication of the hybrid format is the labor-intensive aspects in preparing weekly slides, questions to guide class discussion, in-class assignments and grading of those assignments, and altering course content and assignments according to student performance and needs. Dissatisfaction with workload is common

among faculty as an 'unrelenting pressure to perform.' Often faculty have the impression that they must excel in teaching, research and service, demands that 52% of associate professors say that they are unable to balance. With each new initiative and innovative idea the continuous message sent is '[academic] do more.' A clear indication implicit in this concern is that the proposed approach cannot have labor intensification as an implication.

While there is evidence that people differ in how they think and process information, there is no evidence to indicate that students maximize their performance when provided their preferred method of learning.^{xc} Instead of viewing one style as superior to another, each style itself should be analyzed for the skills it develops. Diversity of instructional styles should be encouraged, as it provides students a wider array of skills. New and old ideas can coexist.

Further research is needed to determine those skills developed through use of and interaction between different pedagogies. Research can have a defined focus in evaluating aspects in the relationship between student and staff, student perceptions of these relationships, the use of staff to investigate and utilize research-based education practices, connecting student activities with real-world outputs and the workplace, and the place of peer learning. Simply, the presumptive superiority of one style as effective, as opposed to the reflective consideration of the advantages and disadvantages of individual teaching approaches, risks 'throwing the baby out with the bathwater' and marginalizing tertiary education.

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