

## **Board 44A: Work in Progress: Unannounced Frequent Examinations to contribute student learning and building academic integrity**

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# Work in Progress: Unannounced Frequent Examinations to contribute student learning and building academic integrity

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## Abstract

Current world challenges require complex solutions from multifaceted and interdisciplinary developments. There is significant research that supports the idea that self-assessment is an intrinsic characteristic in human development. From the first seconds of breathing, humans test their experience to form and advance their knowledge. However, in the current western educational system, evaluations, a natural human process, have turned into activities that bring stress, anxiety, and nervousness to students. For this, researchers replace most of the set exams for unannounced constant examinations throughout the semester. Along with these, the course design included activities that supported students' knowledge to be prepared for the new type of examination. Researchers applied these examinations in two courses of structural analysis in civil engineering and one course of Structures in architecture, with a total of 77 students. At the end of the semester, we conducted a survey to learn students' perceptions and their feelings with these types of evaluations. The results indicate students find unannounced constant evaluations to be helpful in their learning process. Although students were nervous at the beginning of the semester, the supporting activities throughout the semester were helpful to improve their examination performance, and their overall course performed. Finally, students feel more confident with their knowledge after the course due to the unannounced constant examinations. The authors discuss the possible factors driving the results, next steps and explore the avenues academia could take to form better pedagogic strategies in the direction of building academic integrity. Implications for research and practice are provided.

## Introduction

Throughout the pedagogic evolution of teaching, various problems regarding the well-being of students still coexist, forms of grading and academic integrity. Many of these problems happen from the traditional pedagogic methods that produce disorders such as stress and lack of confidence. "Pathological factors of these stresses may include the inability to manage time, the lack of academic skills of competing with classmates" [1]. Traditional methods of evaluation often rely on formal assessments such as exams, quizzes, and assignments. These traditional methods are usually announced in advance and students have time to prepare for them. However, traditional approaches to learning assessment have been criticized for failing to accurately measure student learning [2]. Research suggests that these tests may not be appropriate for all types of students [3] and for fostering a culture of rote memorization and test-taking "Traditional exams are generally defined as a set of questions and problems that require individual, closed-

book, and time-limited work” [4] rather than critical thinking and problem-solving skills. Formats such as open-book exams encourage critical thinking, problem-solving, and reflection because the exam does not require memorization. “Students find traditional closed book exams to be more threatening than open-book exams and that the ability to use a textbook or other resource increases the student's confidence while decreasing anxiety levels” [5].

Additionally, many disciplines have high rates of academic cheating or use other means to gain an unfair advantage, making the results of these evaluations questionable. “Students engaging in cheating during examinations is a prevalent phenomenon worldwide, regardless of the country's stage of development.” [6]. Also, this type of evaluation promotes greater stress on students as it tends to have less exams with higher assessment scores. “Traditional grading practices vary considerably in which behaviors they include in a grade and to what extent” [7]. Traditional methods of evaluation are still criticized how the accuracy of assessing student learning, progress, and consequently, the quality of the education [4], [8], [9]. “It should be noted that assessment for learning from the teacher was preferred because students appreciated the teacher's authority and experience [10]. As a result, alternative evaluation strategies such as unannounced evaluations have been proposed to address these limitations and provide a more authentic measure of student learning.

Educational institutes consider traditional techniques of evaluation as the primary means of assessing student progress “The concept of general ability, as measured by traditional IQ tests such as the Wechsler scales, has had a long and successful history in psychology and education so much so that the tests have been used to define intelligence”[11] . In this context, exams are seen as the sole indicator of student knowledge. [9] This creates a narrow view of education and limits the development of basic skills necessary for future success. The study suggests campaigns to engage students, such as creating courses tailored to their interests and goals [12]. It also often creates high stress levels for students and a pressure-filled environment that may not be conducive to learning [13].

The traditional approach to evaluation is becoming increasingly criticized “Academic interventions that tackle uncertainty avoidance related barriers may focus on dismantling said toxic culture starting from breaking down traditional paradigms and the requirements they put forward, in both majors” [14]–[16] “This pandemic forced the use of this type of pedagogy and now that its effectiveness has been proven, many will not go back to traditional methods” [8], [17]. and has led to calls for more diverse and comprehensive evaluation techniques that better reflect the diverse ways that students learn. Our research begins to fill this gap by exploring a new pedagogic strategy based on frequent unannounced evaluations with the objective of contributing to student learning and to build academic integrity in students. The study was conducted by introducing frequent unannounced evaluations in Civil Engineering and Architectural courses. Along with the frequent unannounced evaluations, the pedagogic strategy included various types of activities and studying habits to promote learning.

## **Background/Framework**

Academic integrity refers to the expectation that everyone who belongs to the academic community acts according to universal standards demonstrating responsibility, honesty and

sincerity against unethical actions such as plagiarism and cheating [18]–[20]. “Plagiarism as an act of submitting a document that belongs partially or completely to somebody else without due reference” [21]. [18]–[20]. [22] Cheating on a test has several causes such as not being fully prepared for an evaluation, leaving class with questions and not actively seeking the answers, work overload, or even due to fear of failing[22]. Another reason for cheating is that students are not instilled with academic values from the beginning, so they are not aware of the repercussions of cheating [23]. A survey carried out on a group of students in Puerto Rico provided data about their reasons for cheating and 90% of them stated that the exams were too difficult or they did not enough time [23].

Exams are often related to feelings of stress and anxiety in students. “Traditional time-limited exams can generate stress and anxiety; some students had worse performance than students who were unaffected by the time factor in the exam” [4]. Even if tests are notified ahead of time, students reported feelings of pressure and uncertainty [24]. Anxiety affects students' attention and concentration during various formats of evaluations [25] In addition, students having feelings of panic and fear of failure during examinations can lead to the perception that the test is a potential disaster [26]. As can be seen stress and anxiety also come from specific factors of the exam process and restrictions. Exam conditions elevated cortisol, which is correlated with a reduced exam performance [27]. Also, it has been previously reported that the method of navigating between questions is a concern for students, this can be seen in one-way exams that do not allow revisiting previous questions, that’s why this can be seen as unfavorable by students [28]. This stress that students suffer during an exam caused, for example, by the fear of failure, can produce a loss of self-esteem [29]. It is also caused by the expectation of the test outcome which may lead them to feel anxious “In relation to stress, only GPA and social factors were significant; compared to low stress, moderate to high stress had significantly higher odds for GPA” [30].

However, when students prepare constantly in each class, their level of anxiety and stress decreases, Lama M. (2011) supports this by stating that a positive correlation exists between student anxiety and academic performance, implying that when students have a moderate level of worry, their academic success increases. Students who are tested at least once a week tend to do better on midterm and final exams compared to students who were not tested regularly [31]. This effect, technically known as washback, is defined as the effect of testing on learning and teaching. Where a high frequency of testing is a positive washback because it encourages practice and review[32]. Having high-frequency quizzes develops good study habits, they conducted an experiment where they concluded that students with weekly testing performed better than the no-testing group [33]

According to Elsalem [28], students who pass their exams do not always learn and vice versa. In part, because grades are being used as an indicator of academic achievement [34]. Grades are important for students in practical terms, but they don't necessarily reflect the amount of knowledge the students have acquired, their understanding of the subject, or their creativity in that field, which means that the results obtained may not represent the level of knowledge or performance of a student [35]. The prediction of academic achievement varies based on the selected criteria, as evidenced by empirical evidence [36].Constantly working on homework that

is designed to support the learning process, helps students improve their learning by reinforcing what they have learned in class and enhancing their skills through repetition and practice [37]. Research suggests that the improvement in student performance in both Singapore and the United States can be attributed to the rise in the frequency of homework assignments [38]. The students' perceptions of great learning gains, which are positively related to better examination results, are influenced by their accurate understanding of the subject matter and the tasks they have completed throughout the semester [39]. They explain that with this pedagogic strategy developed a self-reported study style, intelligence, attitude, time commitments, and homework complexity had a large significant impact on whether students completing assigned homework affected students' academic performance [40], [41]. They emphasize the importance of sending to practice with homework of the same level of test difficulty to avoid problems when giving an exam. A study shows the different impacts of a methodology in which homework is sent with a high frequency. The research found that those with low grades improved their academic performance, while those with good grades suffered due to the high frequency of homework assignments [42]. Homework is very helpful for students, but too much of it can be detrimental. Some consider that assigning homework encourages student participation in their own education and promotes the formation of good study practices, [43] but an excessive amount of low-quality homework can lead to student disengagement from school and an increase in mental health problems, as they begin to reject it [43]

## **Research objective**

The objective of this research is to explore the effects of frequent unannounced evaluations on student's performance. Furthermore, researchers aim to explore how the pedagogic strategy accompanying the frequent unannounced examinations supports building habits for academic integrity in student's by encouraging good studying habits for learning rather than periods of time with no learning that may end up in temptation for cheating. This article presents the results from a conducted pilot study.

## **Methodology**

This exploratory study proposed frequent unannounced evaluations in civil engineering and architecture courses. At the end of the semester, an anonymous survey was administered to students taking the courses Structures 1 (n=21 students) and Structures 2 (n=18 students) in architecture and Structural Analysis 1 (n=22 students) and Construction Costs (n=16 students) in civil engineering. The survey provided contained open-ended and multiple-choice questions. This pedagogical strategy was applied to all students of the previously mentioned courses. Data were collected at the end of the fall semester 2022 to find out how their relationship with this form of teaching had evolved. Anonymous surveys with open-ended and multiple-choice questions were used as a method of obtaining information with the purpose of allowing students to express their perception of having frequent unannounced evaluations. The questions inquired about their perception of subject learning and their academic integrity.

This study focuses on students' perception on unadvised test vs. Normal test and how they perceive their effectiveness in terms of learning. It should be emphasized that this study didn't include a comparison between the group of students and a control group meaning that the

difference in student performance was not directly assessed, so it cannot be concluded with certainty that students that took an unadvised test got better results than those who took an advised test. That is why this is considered as a work in progress, so that in the future a more complete investigation can be carried out in greater detail and in a more quantitative and qualitative manner.

### *Data Analysis*

The range of analysis of the project was the whole fall semester 2022, this period was used to know how the students' perception of the pedagogic strategy and its influence in students studying habits and integrity building. The surveys were provided using Qualtrics software and the answers are imported into the Excel software where the five open-ended questions along with the multiple-choice questions with their respective answers. The next step was to paint answer boxes with similar ideas for each question. Different colors were used to represent the different ideas, such as yellow for moderately positive opinions, green for indifferent answers, and gray for those who disagree. The main ideas were organized into main themes that demonstrated the results obtained by the study technique of high frequency of unannounced testing, the secondary ideas were used to argue in the results.

The open-ended questions in the surveys revolved around evaluations to find out how this pedagogical strategy had influenced the students. The first question focused on what effects this pedagogical strategy had on the students' learning process, the second question asked how the student's perspective towards this technique had changed throughout the semester, the third question asked if it helped them for the tests, the fourth question inquired about the psychological state and how the students felt about having this format of tests, the fifth question asked if they were happy with their performance, if the pedagogic method helped them or if they would have preferred to be informed beforehand.

### *Characteristics of the pedagogic strategy*

All courses reported in this study had the same instructor who designed the schedules so that there were two announced quizzes and five unannounced quizzes, which were worth a combined 15% of the final grade. The exams that were provided throughout the semester for the two engineering courses and for the two architecture courses had the same degree of difficulty, pedagogy, resolution approaches, and topics. The exams consisted of six multiple-choice questions and three problem-solving questions, thus keeping these variables constant despite being different college majors. To avoid cheating, three different versions of the exam were implemented; the questions were similar, but with subtle differences so that the students could not have the same answers. Students were informed of the different versions of the exams and were allowed to have a pen, pencil, eraser, ruler, calculator, and a non-alcoholic beverage. Cell phones were not allowed and had to be turned off and put in the backpack, not in the students' clothing pockets. These rules were used for all exams whether they were announced or not.

Apart from exams, there were also other activities such as group work and individual homework having the same difficulty as an exam so that the active participation of students in the learning process is encouraged. Since these activities give them the opportunity to receive feedback and

work together, their communication and learning abilities improve. Another kind of activity implemented in this course is the application of knowledge in real life problems and work, so that students can apply their knowledge and abilities acquired on the course. In this way, students not only learn about basic course theory, but also acquire practical and relevant abilities for their future and for their professional performance. As for homework assignments, the professor sent homework at the end of each session, and it was due the night before the next class. Finally, the instructor held office hours in person and via Zoom, so students had access to resolve any questions.

## Results

The results of the surveys conducted to the group of students revealed valuable insights on their perspectives and experiences with unannounced evaluations. These results provide a comprehensive picture of the students' opinions and feelings towards these types of assessments. The findings of the survey will be analyzed and used to better understand the impact of unannounced evaluations on the students and to identify any areas that need improvement. For a better understanding, the results will be divided to answer the questions “How do unannounced exams contribute to student learning?” and “How do unannounced exams contribute to academic integrity?” that explain the benefits of unannounced evaluations to student learning and the benefits of the pedagogic method to build academic integrity.

The first research question is *how do unannounced exams contribute to student learning?* Some of the positive outcomes of such pedagogic strategies include stress reduction, improved performance, confidence improvement and new study techniques. These responses are presented in the table below.

<b>How do unannounced exams contribute to student learning?</b>	
Stress reduction in students	- Better results in previous exams
	- Preparation through homework
	- Greater attention to classes
	- Lower exam value on the overall grade
Improvements in student performance	- Constant review in class and homework
	- Continuous preparation for exams
	- Conscientious study and review
The students feel more secure and confident	- Knowledge of the exam format
	- Homework with same complexity of exams
	- Confidence of their knowledge
	- Clarification of matter and homework doubts
Development of new study techniques	- Getting out of the comfort zone
	- Increased creativity

### *Stress reduction in students*

Students expressed that thanks to the frequent tests they paid more attention to the class while they continued to prepare constantly with their homework, other responses commented that they continuously reviewed matter to increase their knowledge and be always prepared. This has generated a decrease of stress in the students, for example, one student states that "when a (test)

was due I felt calm because I knew that with the homework, I had done I could solve the tests without a problem, and I did not feel that previous stress". Even though some students felt a little anxious because they did not know when there might be a test, at the time of taking the test, this feeling of anxiety diminished. Moreover, this fear disappeared after the first exams, when students received their grades. Another important aspect for the reduction of stress in students is the fact that the course had several tests over the semester which decreased the value of the grade of each exam for the overall grade. As indicated by the following student "This course was much more relaxed, it caused me maybe 70% less stress than other math courses where the tests are very important and there are only two in the semester", by not having few exams during the semester with a greater grade value, students had less stress when performing the multiple unannounced evaluations.

A greater knowledge of the subject matter helped to reduce stress in students as they felt more prepared to confront an unannounced evaluation. As one student said, unannounced evaluations "help to maintain interest in class and thus better understand the subject". Over the semester, a greater interest in the class reduced the anxiety and stress suffered by the students as they knew the content of exams and felt prepared to do the exam. In some cases, students also feel "relaxed, since from the beginning it was said that if we did our homework the tests would be and literally easy it was".

#### *Improvements in student performance*

The answers to the questions tell us that students performed better thanks to the pedagogic strategy of constant review in class and homework. One student said "Definitely, because if the homework was done in a concentrated and dedicated way, the tests were very similar, and therefore, they were more bearable. At the course level, having this type of homework also allowed me to put everything I had learned into practice". As a part of conscientious study and review, students also stated that clarify doubts about the homework's made them improve their performance as another student said "Absolutely. Some homework did cause me a lot of doubts due to its complexity, but with help and analysis I could solve them. In this way, the homework exercises allowed me to learn and study for exams" and "Definitely, although sometimes there were doubts, these can be resolved in class". The continuous preparation for the exams also improved student performance for unannounced evaluations as they were ready to take a test anytime. As one of the students said, "It helped me to always be prepared and pay close attention to classes and homework" also "Made me study the topic we saw in class every day so that I could be prepared in case there was a test". Over the course of the semester, students performed better because they were always encouraged to constantly review subject matter.

#### *The students feel more secure and confident*

Students state that the unannounced tests as a pedagogic strategy of study helped them feel more confident, secure, and prepared for the assessments. As the complexity of the homework's was like the exercises presented on the exams, students commented that: "Thanks to the homework I felt prepared and more confident when taking the test." also "It made me feel more confident about the knowledge from the class. I used to review topics I had already noticed, but it didn't make me wait until a test to just understand.". The high frequency of quizzes and homework



causes students to be constantly reviewing, building confidence in their knowledge. Knowing what the format of the tests was like, the students themselves felt more confident because the homework helped them not to forget what they had learned. One of the students said "The course evaluations allowed me to prepare myself with more time and in a better way.... during the evaluations I already feel much calmer because I know that I have the knowledge and practice to solve the exercises". As can be seen, this study technique is effective for the students and helps them not to forget what they learn and to feel confident in what they know.

As the students received course material and did homework, they reviewed the most important points of each topic so that their doubts could be clarified by the teacher in class. The objective of doing this was to contribute to student learning by building confidence in their knowledge. One student commented that "I noticed that since I was less concerned about grades because there were several frequent cumulative tests, I spent more time on really understanding the subject and not just for one lesson". Similar to this comment, there are several like this that reflect students' awareness of the subject matter and preparation for all the evaluations of the course.

*Development of new study techniques*

This pedagogic strategy that contains unannounced evaluations is characterized by a high frequency of tests along with various homework assignments that keep students in constant review. Considering that students have other subjects and need to manage their time so that they can fulfill all their academic obligations, creativity is key factor to develop new studying techniques so they can satisfy the academic load that unannounced evaluation method can have. The following student indicates: "This semester in order to do all the homework and review for a possible test I had to develop a new way of studying to help me keep up" which as you can see stimulates the imagination and improves critical thinking skills. As a benefit of the search for new routines of study, students will be able to further develop their problem-solving and comprehension skills which can also be beneficial for exams.

Moving away from the monotony of traditional study techniques and stepping out of their comfort zone has allowed students to explore new ways of learning. Students comment "it got me out of my comfort zone and also out of monotonous teaching". By being out of their environment they were able to create new ways of learning, which were more efficient and allowed them to retain their knowledge.

The second research question is ***How do unannounced exams contribute to academic integrity?*** Some of the positive outcomes of such pedagogic strategy include greater organization and development of new study techniques. These responses are presented in the table below.

<b>How do unannounced exams contribute to academic integrity?</b>	
Greater organization and responsibility	- Better planning
	- Clear homework deadlines
	- Unannounced exams
	- Need for constant review
	- Continuous class attendance

### *Greater organization and responsibility*

Better planning is a key factor for achieving greater organization and improving responsibility in students as it helps to keep a guide of all pending activities and things to do. One of the students stated that unannounced evaluations "...made me more responsible because I constantly reviewed my notes to have fresh knowledge and practice the exercises, and not forget what I learned in classes and homework."

As an unannounced evaluation could be taken at any time on any day, the need for constant review of the class topic, homework, and continuous attendance to class was important to follow the class in terms of all the activities that needed to be done. In the case of constant review of the topics, one student said that "Having frequent tests made me study more often, reviewing the material frequently to make sure I did well on the test" which promote a greater organization to complete all the task needed. The frequency of homework assignments and clear deadlines promote responsibility among the students as they couldn't deliver homework's before the deadline established. Also, delivering the homework on time means a greater knowledge of the topic which can help with any exam. In terms of academic integrity, all the factors mentioned earlier contributed to a better preparation of the students, which promotes honesty and trust in the subjects where the research was carried out and in any other subject that each student may have.

### *Development of new study techniques*

A greater frequency of unannounced evaluations contributes to better knowledge thanks to the constant review of the topics studied in class. As one of the students said, "Having tests frequently helped me, firstly, to pay close attention to the class because I think it is the main thing to develop a subject of knowledge, secondly, it helped me to always stay active studying or reviewing, if I did not understand a subject, I had to review it again the class, and third, it helped me realize what topic I didn't understand so I could study again". This constant study helped to build a greater academic integrity as students don't feel the need to copy during the unannounced evaluations as they feel confident of their knowledge.

## **Discussion**

From the results obtained, we could see that students completely agree with the fact that a constant review and frequent homework assignment helped to improve their performance in unannounced exams as there were no negative answers to this question. The improvement of the performance comes from the similarity in the difficulty of homework and exams as well as the opportunity to clarify doubts about the homework's during class. Our findings can be confirmed with affirmations as the following "Yes, because the tests were things that had already been and all doubts resolved with the teacher, which made them easier to solve in the exam" where we can assure students felt more confident of class content and therefore, performed better. The pedagogic strategy of unannounced evaluations implies a greater academic charge as students had some homework almost every class however, results bring better benefits in the future [40]. Based on the answers of the survey, our recommendations should be focused on reaching a

balance in the difficulty of homework so that students have a moderate academic load taking into consideration that generally, each one follows five subjects during the semester.

We could identify that most students felt a reduction in anxiety and stress during the progress of the semester which made them feel more secure, confident and prepared for the unannounced evaluations [26]. This improvement in their emotional health comes from the fact that they had a better idea of the type of exam they were about to face as well as they felt better prepared thanks to classes and homework. The following self-reported answer said “Stress and anxiety before the exam in structures decreases because you already master the type of exercises that are solved and you feel more secure because you know how the exam is structured” also, “The stress and anxiety that I had in front of the evaluations in some cases was a problem since I believed that I was not ready to take an exam, but since the exercises were clear and with the good preparation with homework and support that the class gave, I was able to comply with all of them. no problem and those feelings disappeared”. As said by another student regarding stress and anxiety in the following answer “It was high... but it is rather a personal issue since all the evaluations, regardless of the subject or without, are short or long, they make me nervous. Even so, being in a constant evaluation helped me feel more active and involved with the subject.” we can see that the reduction of anxiety and stress also depends on the type of person most specifically in the way it manages nerves during an evaluation process however, this student emphasizes on an improvement of being more related to the class subjects. Considering all the answers provided in the survey, our recommendations would give small clues about upcoming exams as well as bring out the similarities of homework and classes with the exams so students can be more confident.

It can be seen that most of the students agree on a pedagogic method that consists of constant work and review of the topics seen in class, so that they can always be prepared for a possible test [44]. The fact of always being aware of the class increased the feeling of confidence in students, which also decreased stress levels consequently. When these students feel confident with the class topics, they begin to feel more secure, which is good because by being relaxed they can think more clearly, which results in good performance on exams [26]. Also, when a student feels secure, its expectation is fulfilled when receiving the final score because it reflects their effort throughout the semester. For example, one of the students stated: “In this course I’m feeling good after each test because I know how to solve the exercises and the grade is similar to what I had in mind at the time of taking the test”. However, a high volume of homework with complex difficulty can also affect students, resulting in anxiety or even sleep deprivation in some cases, so there must be control over the techniques used in students [40].

Exploring the difference between a conventional course where students have two or more announced exams throughout the semester and a course with unannounced evaluations, we could identify some benefits and problems. With the unannounced evaluations method that consist of constant review and homework students feel more confident, relaxed and less stressed in comparison with ordinary courses where an exam can be so important that a single mistake could mean a total failure of the course. This constant study routine makes students feel more secure, but also makes them more responsible and organized. Students who are organized and keep track of their assignments and deadlines tend to have better grades than those who are less organized, this also encourages them to manage their time better, so they can be more academically successful. In terms of academic integrity, students that develop all the qualities mentioned

previously don't have the need to perform plagiarism during an exam as they have all the knowledge needed to fulfil all the requirements of the course [45].

Even though most of the students were positive about their confidence of favorable results after giving a test, there is also a smaller group that thinks differently. These students express that if they had known the date of the test, they could have studied harder and gotten a better grade. These opinions are completely opposite to what most of the students think, who comment that they feel more confident about their grades after taking a test in addition to the fact that their expectations are always the highest. However, it should be added that as these students leave the exam, they felt a decrease in anxiety. Taking into consideration that many times students tend to prepare a few days before an exam, the possible lack of knowledge can lead to committing attitudes of academic dishonesty [46].

## **Conclusions**

Academic integrity is an important aspect of an academic environment that emphasizes fairness and honesty in all academic activities. To maintain this integrity, it is important that students accept the challenge of the exam and prepare for it with hard work and dedication. Unannounced exams help promote academic integrity because they reduce the temptation for students to cheat or plagiarize. In addition, the inclusion of new pedagogic strategies and constant preparation ensure students' engagement and motivation to better understand the subject. Homework is an important tool to reinforce class content and help students better understand topics. However, excessive work can lead to stress and anxiety, which can lead to sacrifices in academic integrity. Encouraging students to embrace new ways of learning and continually prepare can also help reduce stress and promote academic integrity. In addition, the combination of multiple teaching methods such as practical projects, interactive activities, or lectures can also be useful in promoting academic integrity. This varied approach helps to engage students in different ways, reducing the chance of them getting bored and consequently cheating. Additionally, students who are actively engaged in their education are more likely to retain this information, reducing the stress of cheating on exams or plagiarizing assignments.

Academic integrity is an important aspect of education, and maintaining it requires effort, preparation, and a diverse approach to learning. Unannounced exams, new pedagogic methods and constant preparation help promote academic integrity and reduce stress and anxiety levels. Through a holistic approach to education, students develop a deeper understanding of the subject while maintaining academic integrity and a sense of well-being. For future work, we are aiming to incorporate quantitative data and analysis of stress levels, quality of student learning and academic integrity as well as expanding the research to other courses within the engineering and architecture area. Regarding data collection, we seek to incorporate a mixture of analytic and descriptive surveys at the end of each evaluation with the aim of deepening the differences of opinions about the study method and how this helped to improve academic integrity during the semester. Also, we will develop specific surveys for each course so that we can identify if any specific type of activity helped to improve academic integrity. In addition, by incorporating a control group with traditional pedagogy we will be able to compare all the factors mentioned above.

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