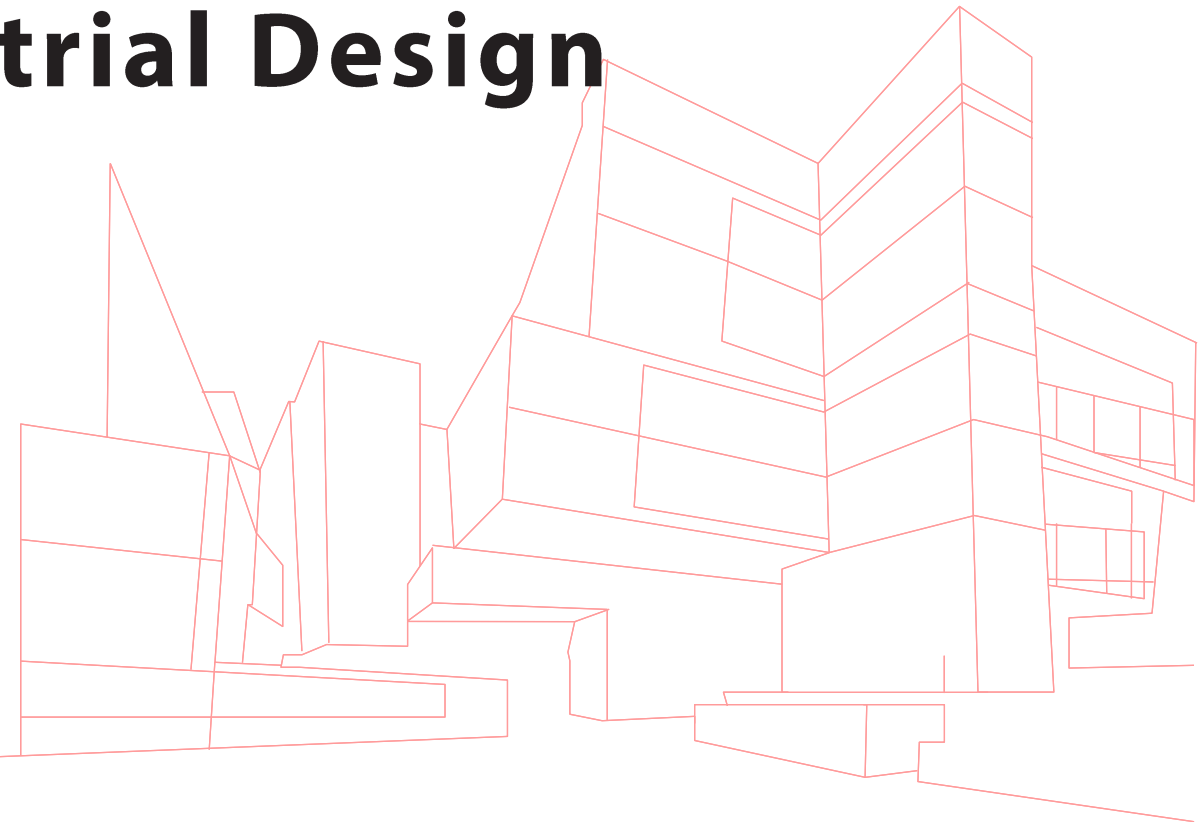


Taoyuan, Taiwan, R.O.C.

# Preliminary Study on the Learning Pressure of Undergraduate Industrial Design Students

Wenzhi Chen

Department of Industrial Design  
College of Management  
Chang Gung University



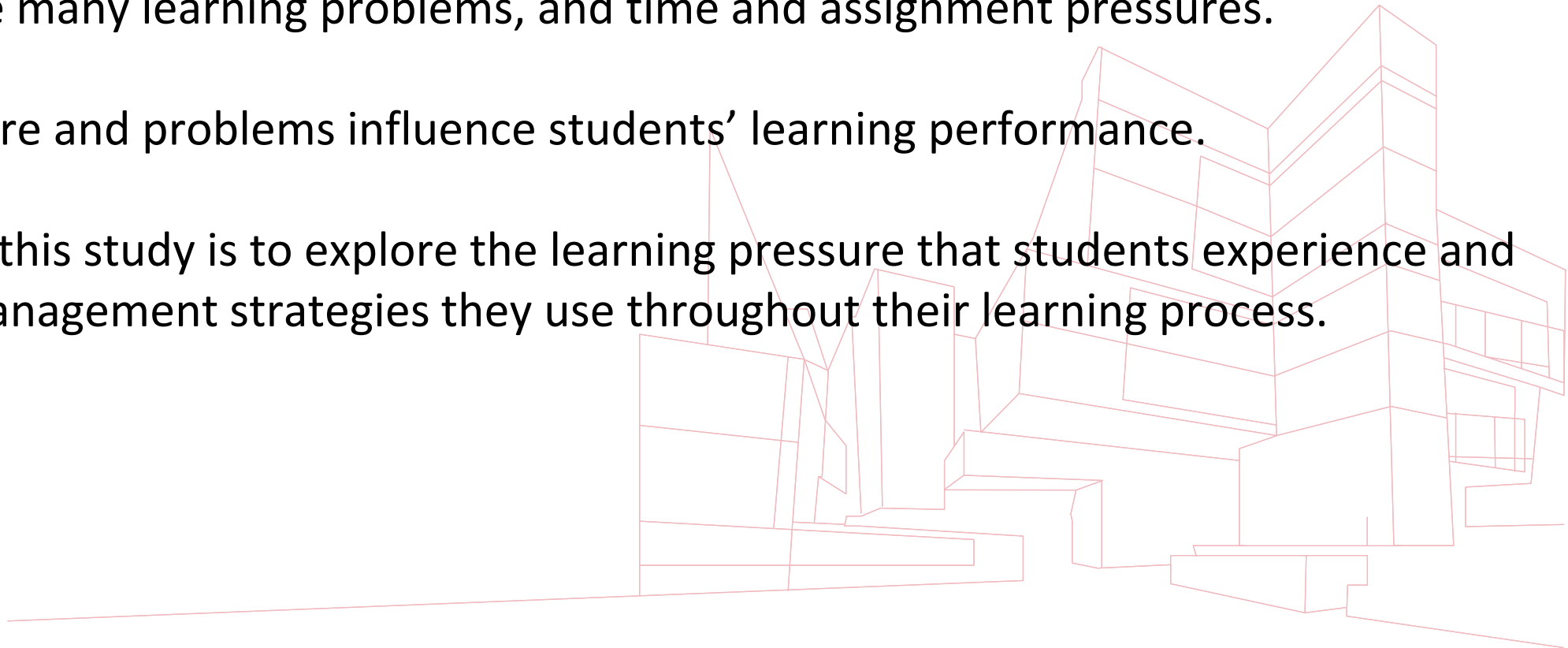
# Introduction

Design education is like a coach or apprentice system that involves “learning by doing.”

Students need to spend a significant amount of time working on real design problems, but they experience many learning problems, and time and assignment pressures.

Learning pressure and problems influence students’ learning performance.

The purpose of this study is to explore the learning pressure that students experience and the pressure management strategies they use throughout their learning process.



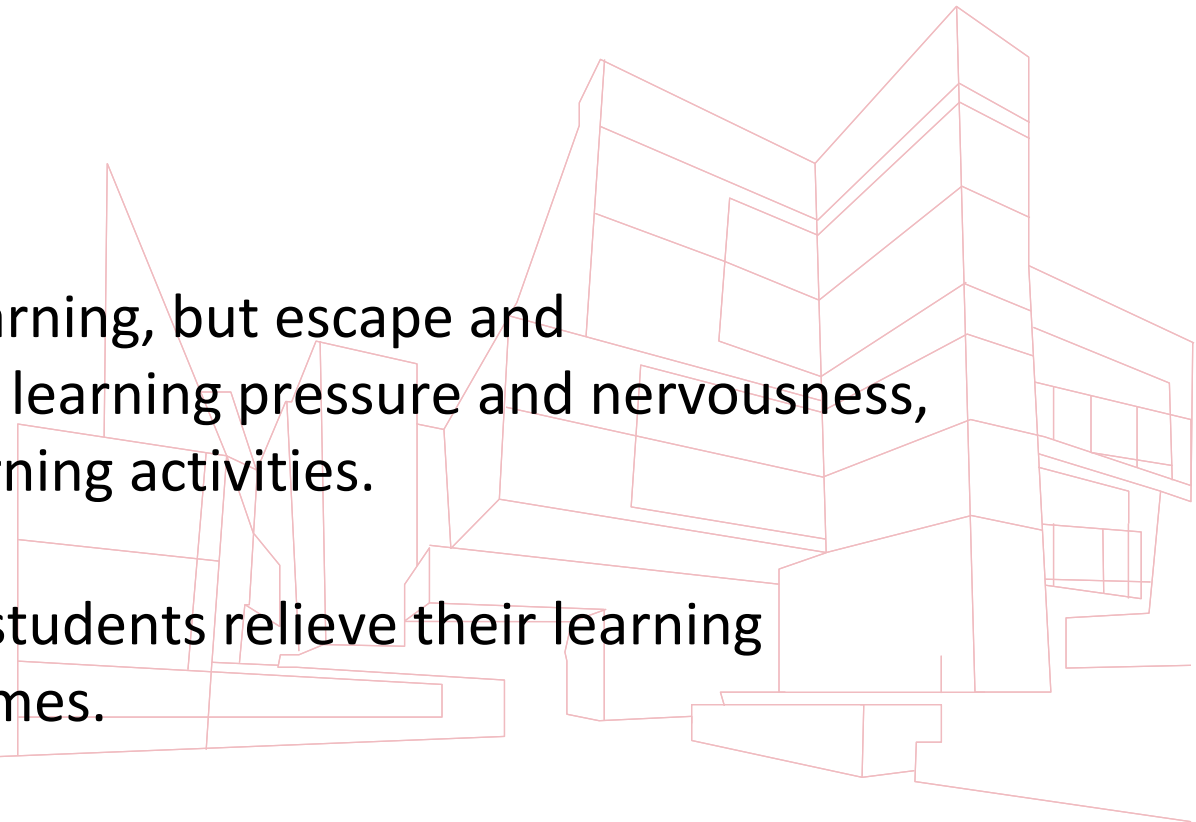
# Learning Pressure (Stress)

The students will lead learning pressure through learning process with various factors, such as stress from courses, barrier to communicating with teachers, ineffective learning methods, poor relationships with family and peers, career planning, time management, etc.

Learning pressure affects students' learning.

Appropriate pressure is the driving force of learning, but escape and procrastination in a given situation will lead to learning pressure and nervousness, even influencing students' participation in learning activities.

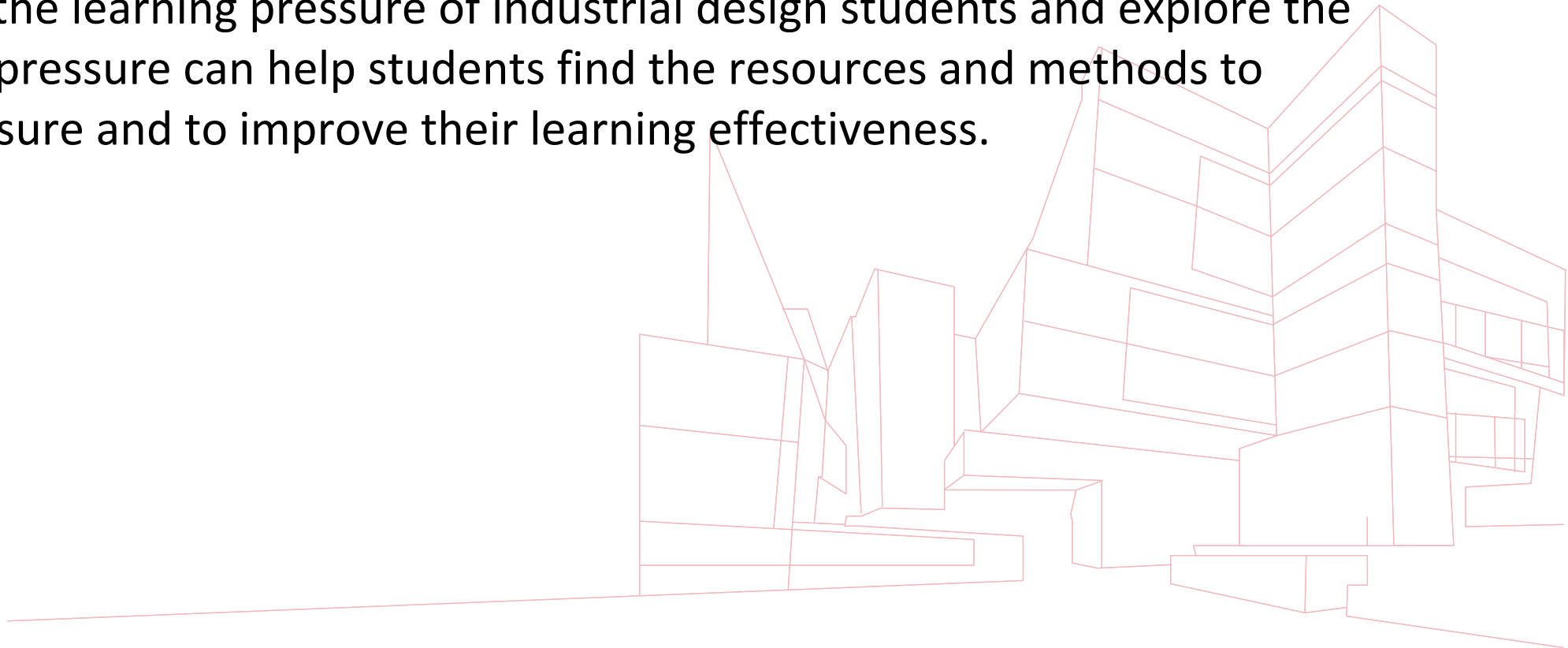
Early discovery and offering support can help students relieve their learning pressure and to achieve better learning outcomes.



# Learning Pressure (Stress)

There are many factors that may cause learning pressure in learning industrial design.

Understanding the learning pressure of industrial design students and explore the factors causing pressure can help students find the resources and methods to relieve the pressure and to improve their learning effectiveness.



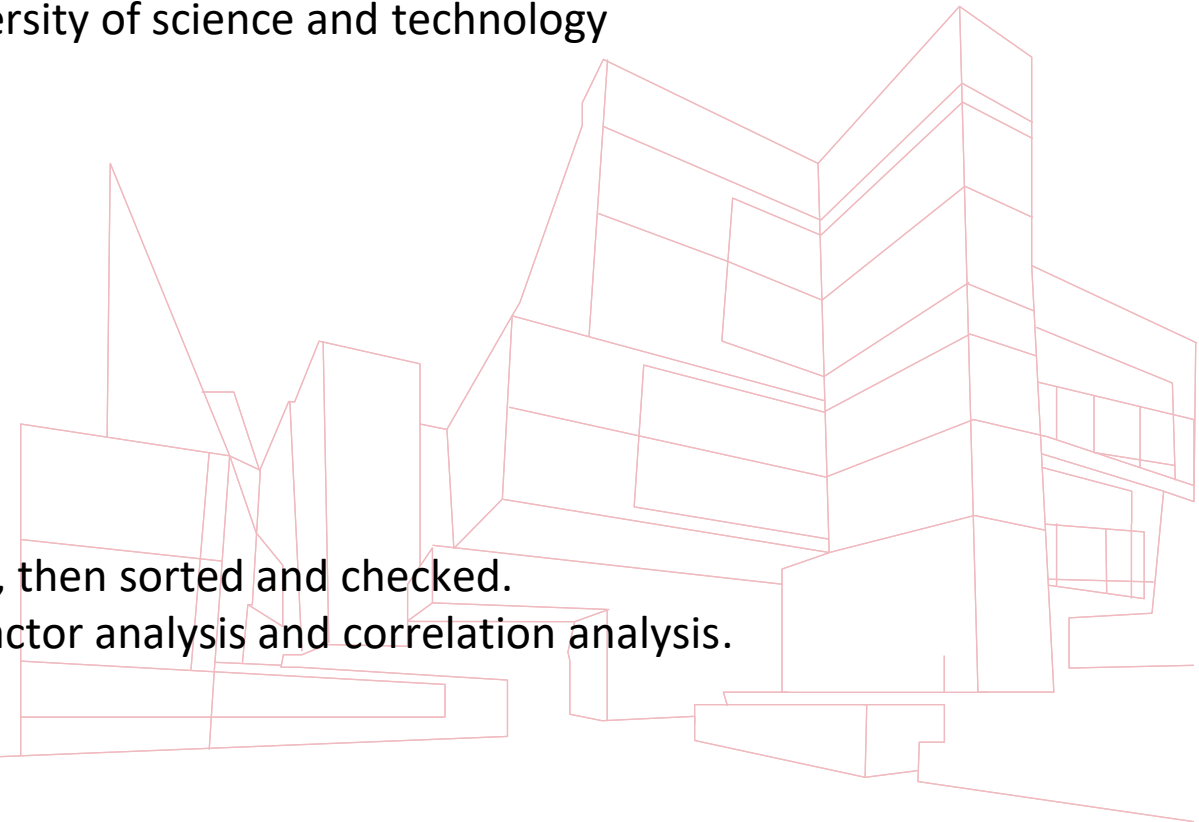
# Research Methods

## Participants

- 297 undergraduate industrial students
  - 122 male students (41.1%) and 175 female students (58.9%)
  - 150 (50.5%) from public university, 147 (49.5%) from private university
  - 177 (59.6%) from university, 120 (40.4%) from a university of science and technology

## Data Collection and Analysis

- The questionnaire survey
  - the basic information
  - learning pressure involved in different course types
  - the issues causing the pressure
  - and the strategies to relieve the pressure.
- Five levels Likert scale
- All the data were entered into a Microsoft Excel datasheet, then sorted and checked.
- Finally, the data were analyzed using SPSS software with factor analysis and correlation analysis.

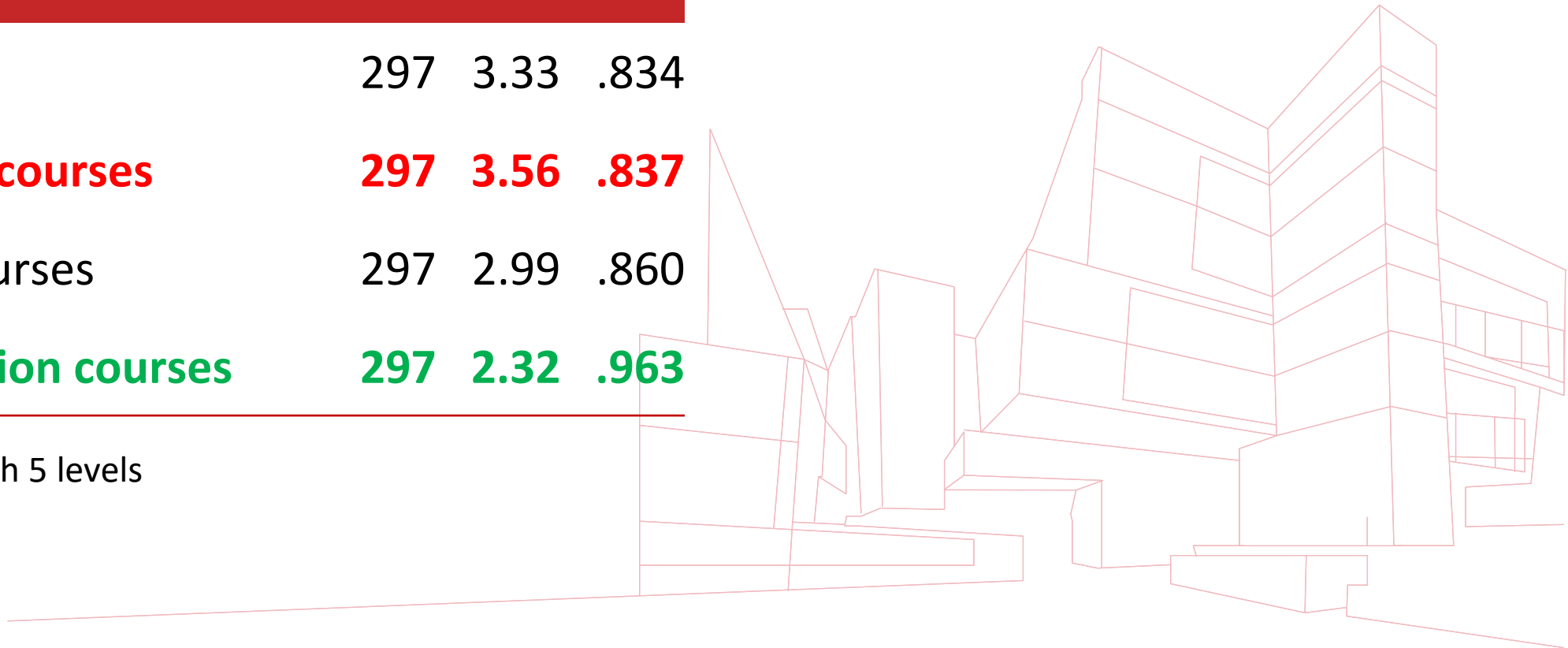


# Results

The learning pressure in different course types

| Course type                      | N          | M           | SD          |
|----------------------------------|------------|-------------|-------------|
| Overall                          | 297        | 3.33        | .834        |
| <b>Core (Practice) courses</b>   | <b>297</b> | <b>3.56</b> | <b>.837</b> |
| Professional courses             | 297        | 2.99        | .860        |
| <b>General education courses</b> | <b>297</b> | <b>2.32</b> | <b>.963</b> |

Note: Likert scale with 5 levels



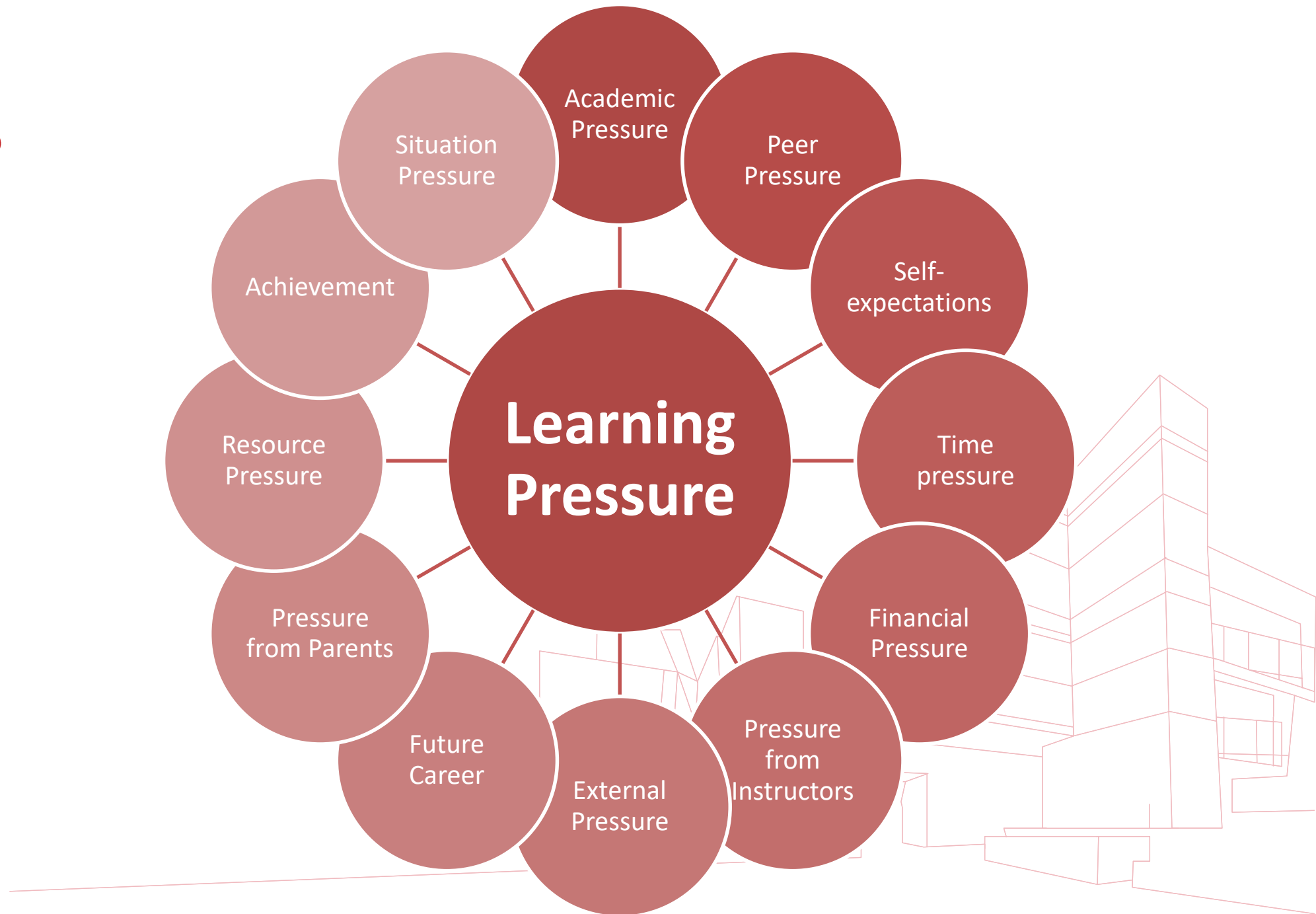
# The issues causing learning pressure

| Questions                                                                                          | M    | SD    |
|----------------------------------------------------------------------------------------------------|------|-------|
| A1. Daily study causes me to experience a great deal of pressure.                                  | 3.34 | .872  |
| A2. There are too many assignments and homework in my professional courses.                        | 3.03 | .924  |
| A3. There are too many design tasks in my core (practice) courses.                                 | 3.03 | .890  |
| A4. The requirements and assignments of my professional course causes me a great deal of stress.   | 3.24 | .945  |
| A5. There are too many presentation and evaluation activities in my professional courses.          | 2.80 | .851  |
| A6. There are too many presentation and evaluation activities in my core (practice) courses.       | 2.83 | .841  |
| A7. My grades are not good; I feel sorry for the teacher.                                          | 2.63 | 1.098 |
| A8. The requirements from core (practice) courses' instructors cause me a lot of pressure.         | 2.95 | .906  |
| A9. Instructors give too little guidance, preventing me from knowing how to finish the assignment. | 3.11 | .996  |
| A10. The teaching methods of core (practice) instructors are not suitable for me.                  | 2.92 | .878  |
| A11. The comments of core (practice) instructors cause me to experience a great deal of pressure.  | 3.01 | .928  |
| A12. The instructors did not describe the objectives and requirements of the course clearly.       | 3.00 | .986  |
| A13. It is difficult to concentrate in class.                                                      | 2.65 | .967  |
| A14. I do not know how to meet the instructors' request.                                           | 3.28 | 1.015 |
| A15. The competition between classmates makes me experience pressure.                              | 3.26 | 1.112 |
| A16. Having a classmate with good design abilities in class makes me experience pressure.          | 3.48 | 1.092 |
| A17. My bad design work makes me experience pressure.                                              | 3.85 | .957  |
| A18. I am afraid that my classmates will criticize my design work.                                 | 3.27 | 1.070 |
| A19. My parents' attention to my courses and grades makes me feel stressed.                        | 2.56 | 1.038 |
| A20. My poor grade makes me feel sorry for my parents.                                             | 3.21 | 1.130 |
| A21. Parents are too concerned about my design, which makes me feel stressed.                      | 2.60 | .990  |
| A22. Parents care about my life makes me feel stressed.                                            | 3.01 | 1.099 |
| A23. I feel a great deal of pressure regarding my future career or study.                          | 3.81 | 1.056 |
| A24. It is difficult to decide whether to engage in a design job in the future.                    | 3.26 | 1.172 |
| A25. I feel a great deal of pressure to compete with other graduates from other schools.           | 3.61 | 1.033 |

| Questions                                                                                         | M    | SD    |
|---------------------------------------------------------------------------------------------------|------|-------|
| A26. I have no confidence in my abilities and feel it's difficult to find job.                    | 3.44 | 1.078 |
| A27. I feel there are too many assignments, but not enough time.                                  | 3.57 | .994  |
| A28. My poor time management skills make me feel a great deal of pressure.                        | 3.74 | .961  |
| A29. Always feeling that there is not enough time make me experience a great deal of pressure.    | 3.69 | .944  |
| A30. Often having a lot of homework at the same time make me experience a great deal of pressure. | 3.71 | .938  |
| A31. The high material costs make me experience a great deal of pressure.                         | 3.92 | .944  |
| A32. Outsourcing costs are too high, making me experience a great deal of pressure.               | 4.08 | .917  |
| A33. The high cost of graduation exhibition makes me experience a great deal of pressure.         | 4.18 | .895  |
| A34. I feel stressed when cannot achieve my own design goals.                                     | 4.18 | .802  |
| A35. I often feel that my design is not good enough.                                              | 3.86 | .925  |
| A36. I am often worry that my design is not be approved by the instructors.                       | 3.73 | .929  |
| A37. I am not satisfied with my performance in the design professional courses.                   | 3.44 | .903  |
| A38. I have no confidence in my design ability.                                                   | 3.20 | 1.013 |
| A39. I feel a great deal of pressure in gaining my instructors' approval of my design.            | 3.45 | .945  |
| A40. I am afraid to receive criticism from my classmates.                                         | 3.28 | .983  |
| A41. I feel pressure when faced with the instructors.                                             | 3.47 | .949  |
| A42. There will be pressure when facing external reviews.                                         | 3.77 | .962  |
| A43. The learning pressure will affect my emotions.                                               | 3.51 | 1.028 |
| A44. I will feel bad when the pressure is great.                                                  | 3.41 | .976  |
| A45. The pressure from my instructors helps in my learning and progress with assignments.         | 3.49 | .931  |
| A46. It's hard to finish the assignments when there is higher learning pressure.                  | 3.21 | .998  |
| A47. The learning atmosphere of the class affects my learning.                                    | 3.78 | .907  |
| A48. Simultaneously taking a number of professional courses make me feel highly pressured.        | 3.37 | .916  |
| A49. The opening time of the workshops is not enough that resulting pressure.                     | 3.65 | 1.183 |
| A50. The learning space and resources are insufficient, affecting my learning.                    | 3.52 | 1.098 |

# Results

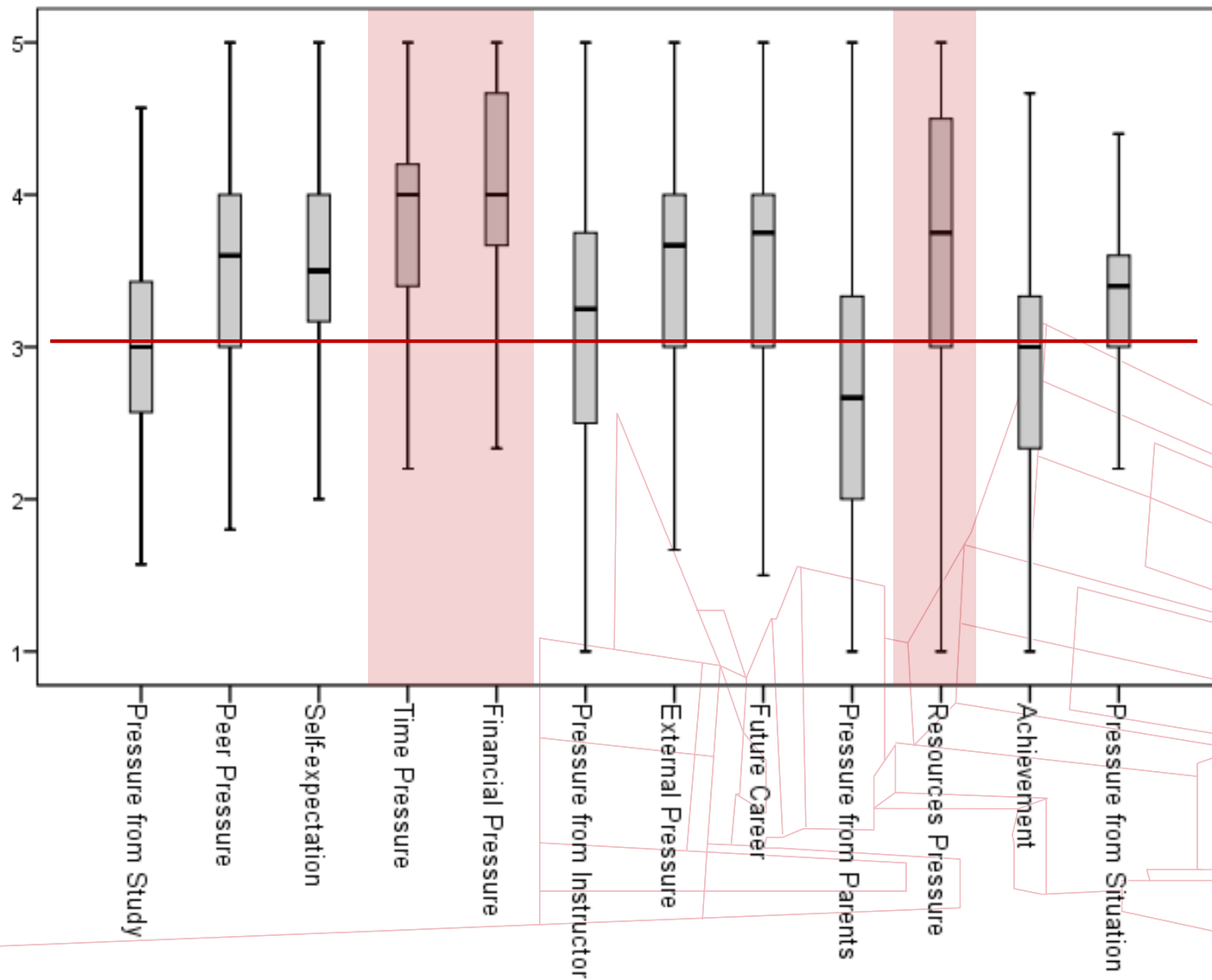
## The Learning Pressure Sources





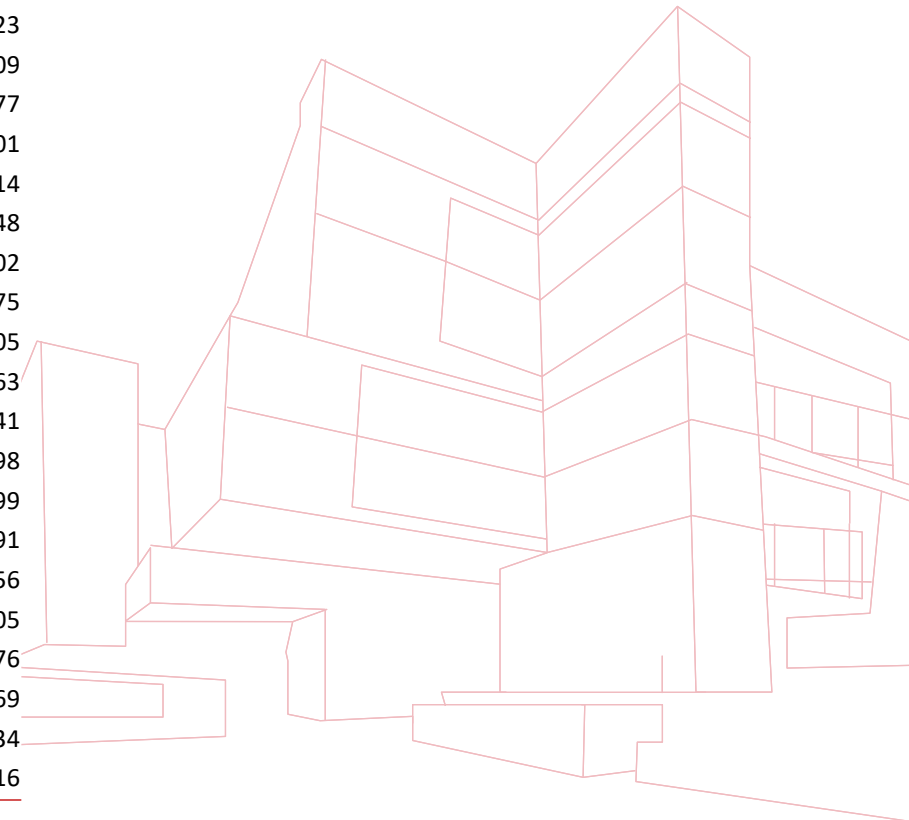
# Results

## The Learning Pressure Sources



# Pressure management strategies

| Strategies                                                                                          | M    | SD    |
|-----------------------------------------------------------------------------------------------------|------|-------|
| B1. I will try to figure out the reason when I am facing learning problems.                         | 3.96 | .625  |
| B2. I will try to overcome my learning difficulties.                                                | 4.01 | .604  |
| B3. I would like to withdraw from some courses when facing learning pressure.                       | 3.29 | 1.071 |
| B4. I will objectively analyze the learning problems I have encountered from various angles.        | 3.72 | .731  |
| B5. I will try to solve my learning problems.                                                       | 3.98 | .690  |
| B6. I will refer to a previous method to find ways to solve my learning problems and stress.        | 3.84 | .723  |
| B7. I will find more trusted peers or friends to help when facing learning problems.                | 3.96 | .809  |
| B8. I will try to find a variety of information to solve my learning problems.                      | 3.91 | .677  |
| B9. I will participate in related activities to help myself solve my learning problems.             | 3.33 | .901  |
| B10. I will use religious beliefs to help solve my learning problems.                               | 2.09 | 1.114 |
| B11. I will try to use the school's counseling system to help solve my learning problems.           | 2.17 | .948  |
| B12. I used to brush my learning problems aside without trying to solve them.                       | 2.35 | 1.002 |
| B13. I easily give up and do not try to solve my learning problems.                                 | 2.23 | .975  |
| B14. I often do not solve my learning problems because I am upset.                                  | 2.56 | 1.105 |
| B15. I think of school as a way to solve my learning problems.                                      | 1.64 | 1.063 |
| B16. When I encounter a learning problem, my absenteeism will increase.                             | 2.41 | 1.241 |
| B17. Eating and drinking can help me to reduce my stress.                                           | 3.13 | 1.198 |
| B18. I think the pressure and the problem that has arisen cannot be changed.                        | 2.73 | 1.099 |
| B19. I will use good emotional management strategies to adjust my negative emotions and stress.     | 3.43 | .891  |
| B20. I will listen to music, watch movies, and use other leisure methods to eliminate the pressure. | 4.13 | .856  |
| B21. Sleeping can help to eliminate my stress.                                                      | 4.00 | 1.005 |
| B22. Engaging in outdoor activities helps to eliminate my stress.                                   | 4.19 | .776  |
| B23. I will communicate with my instructors to reduce my learning pressure.                         | 2.94 | 1.069 |
| B24. I will persuade myself to accept the status.                                                   | 3.52 | .934  |
| B25. I will try to change myself to improve my learning problems and obstacles.                     | 3.84 | .716  |



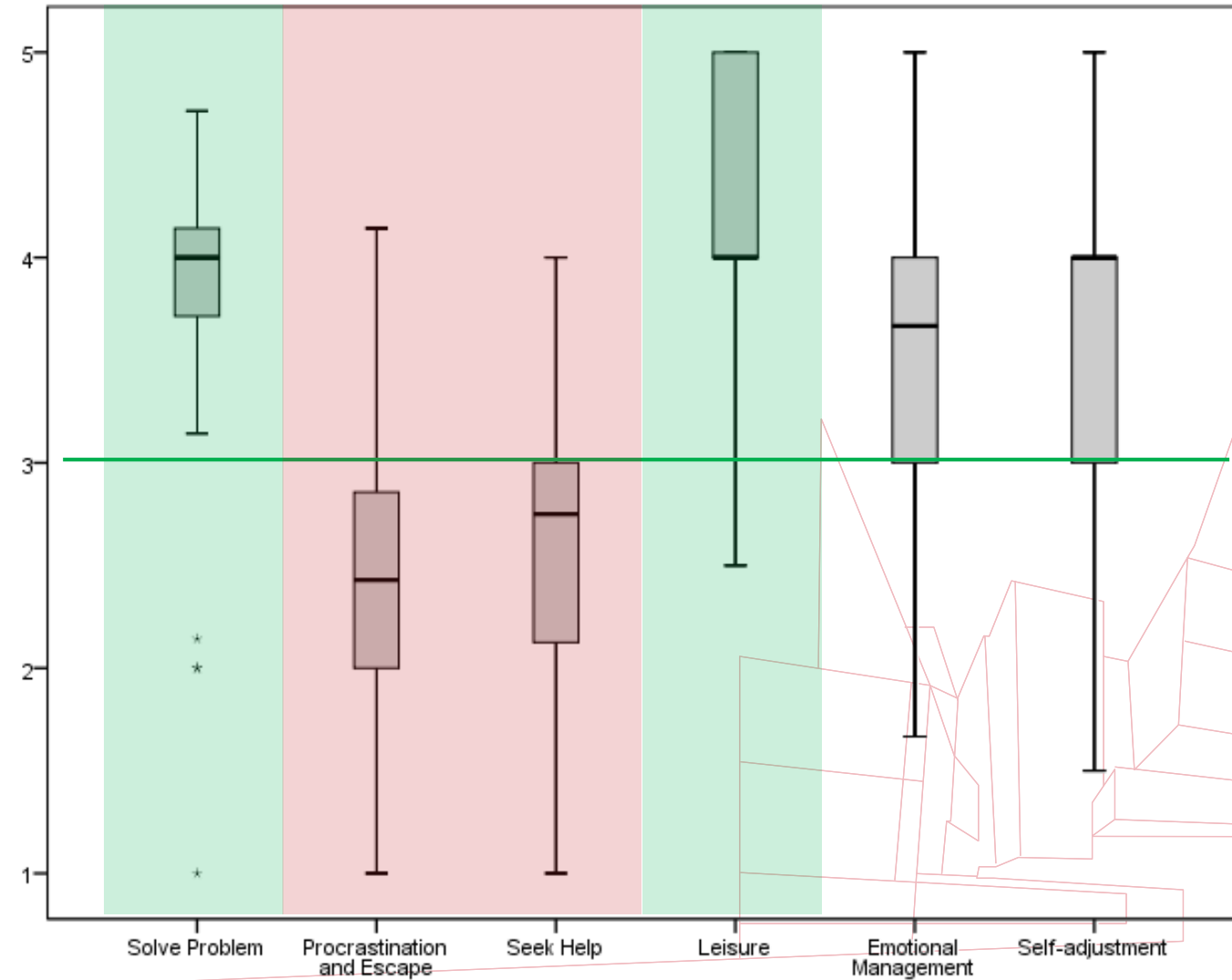
# Results

## The Pressure Management Strategies



# Results

## The Pressure Management Strategies



# Learning Pressure Sources

Academic Pressure

Peer Pressure

Self-expectation

Time Pressure

Financial Pressure

Pressure from Instructors

External Pressure

Future Career

Pressure from Parents

Resources Pressure

Achievement

Situational Pressure

Problem Solving

Procrastination and Escape

Help Seeking

Leisure

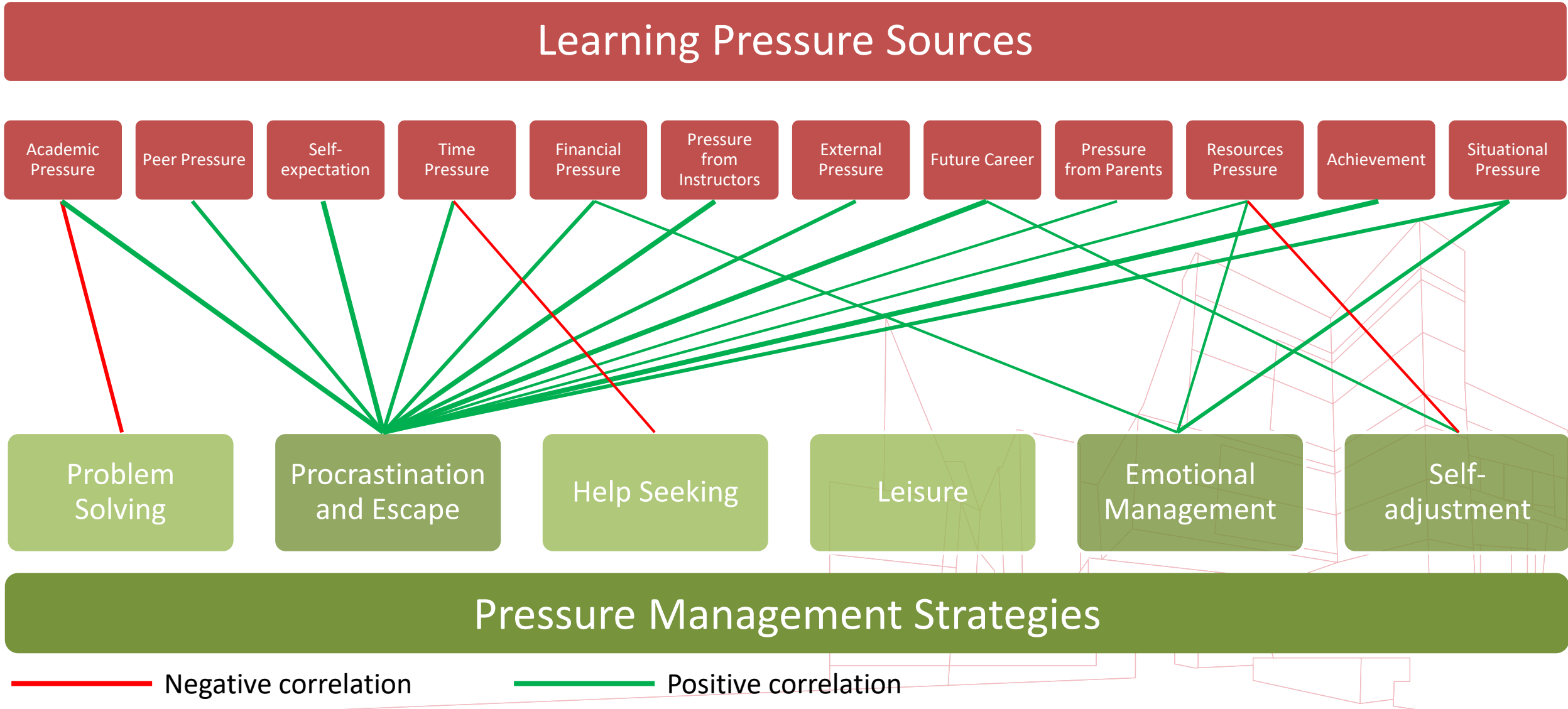
Emotional Management

Self-adjustment

# Pressure Management Strategies

Negative correlation

Positive correlation



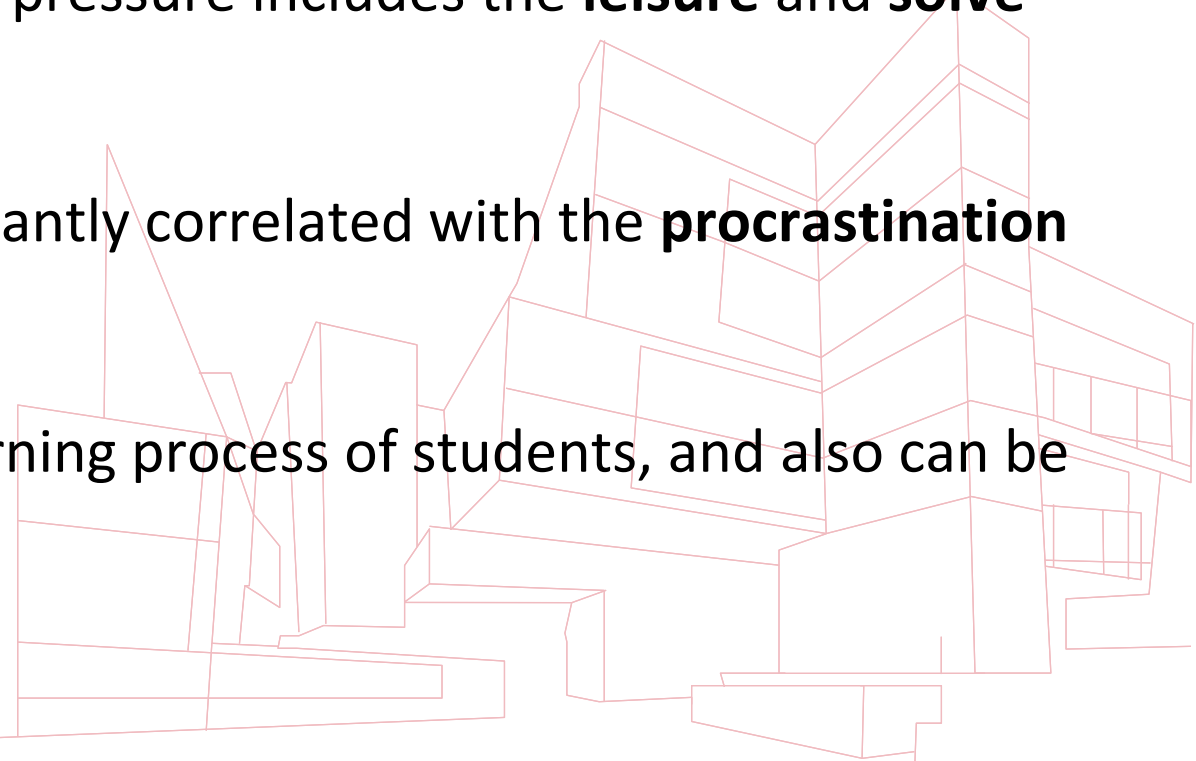
# Conclusions

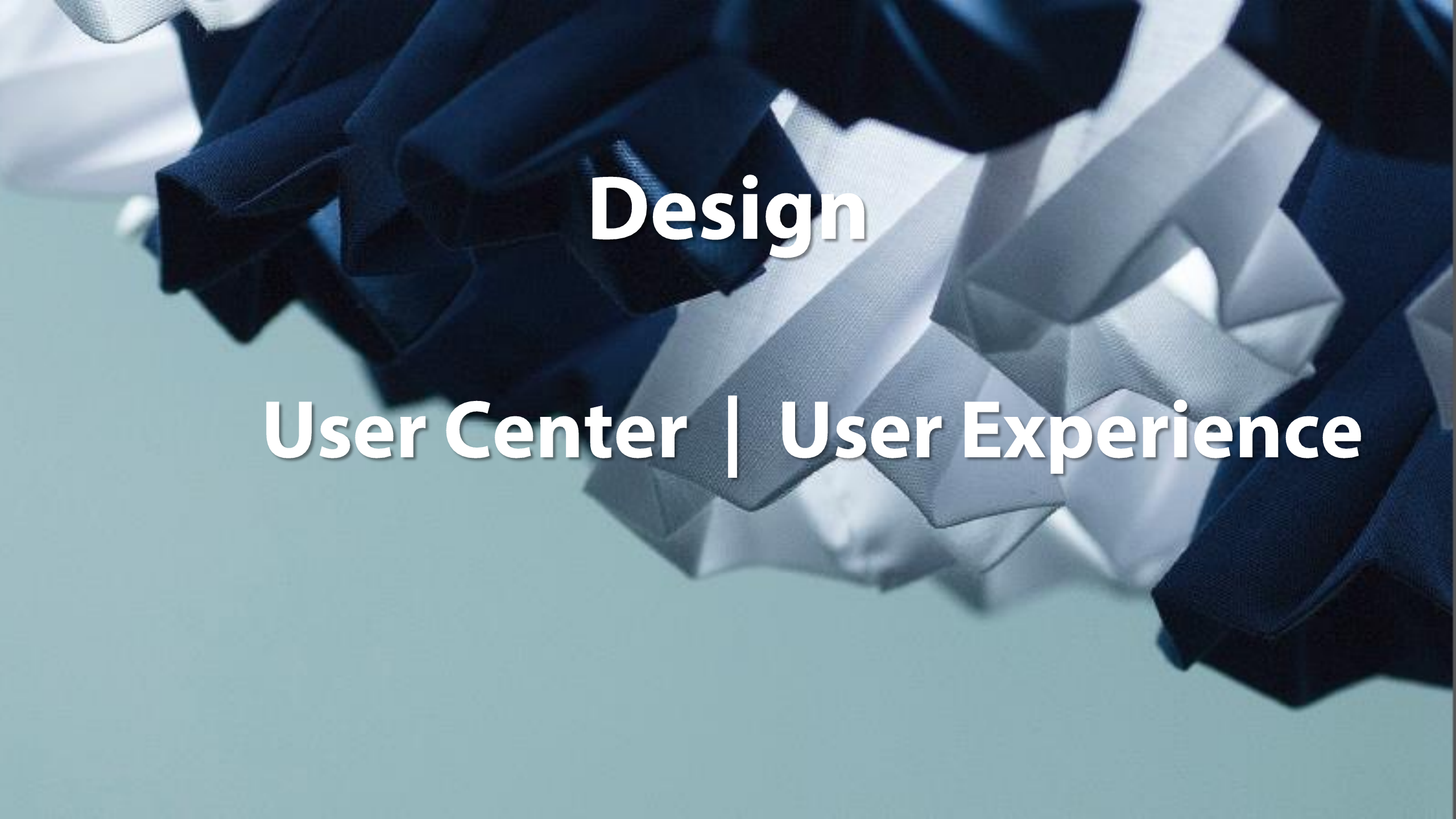
Students experienced the learning pressure by various issues, especially on **finance, time and resources**.

The most useful strategies for management of pressure includes the **leisure and solve problem**.

The most of the **learning pressures** are significantly correlated with the **procrastination and escape** strategy.

The results can deepen understanding the learning process of students, and also can be applied in teaching and future research.





**Design**

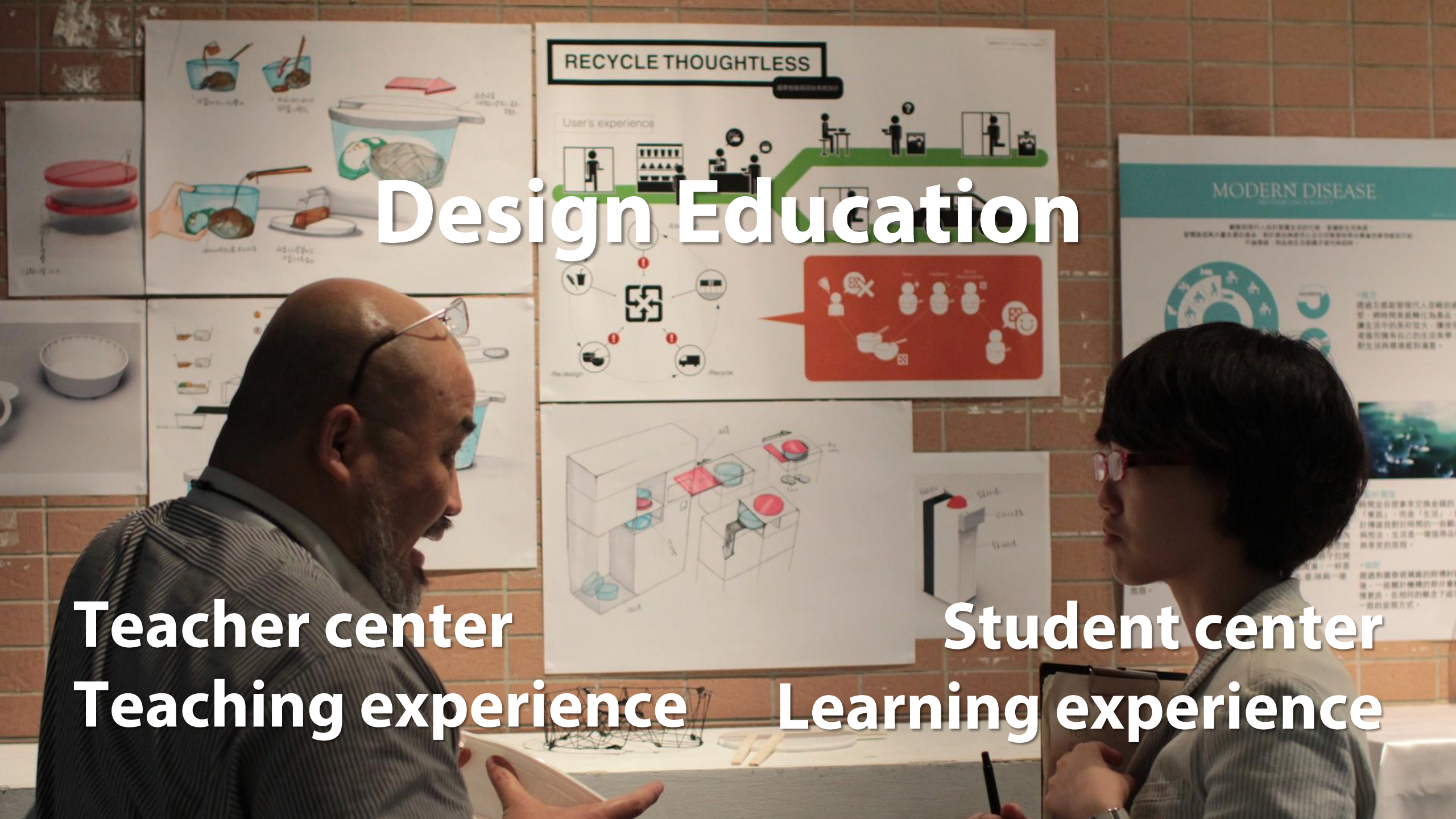
**User Center | User Experience**



# Design Education

Teacher center  
Teaching experience

Student center  
Learning experience





# Thank you for your Listening. All comments are welcome.

## Contact

wenzhi@mail.cgu.edu.tw

<http://wenzhi.cocreathink.net>

## Acknowledgments

This research was funded by the Ministry of Science and Technology, R.O.C. under grant numbers NSC 103-2410-H-182 -016.  
Thanks are extended to all participants and research assistants for their contributions to these projects.

