Exploring the students' experience/perception of IEQ at a private higher education institution.

Research report

Honours in Interior Design

RESE8419

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DECLARATION

I, Storm Hadley Arpin, hereby declare that the research report submitted for the interior design honours degree to independent institute of education is my own work and has not been previously submitted to other universities or higher education institutions for degree purposes.

I will further declare that all sources have been, quoted, cited, or acknowledged by an inclusive table of referencing that is on part with the IIE's Referencing Guide.

Abstract

Interior design is a very intrusive type of field and has the abilities to change peoples living standards for the better. The main argument is that we as human beings accept things as we see and experience them, and this has a negative impact toward our health and wellbeing. Especially in the beginning stages of our life's. The biggest developing stage for us is during our learning periods. primary, secondary, and tertiary. The best way to collect the data is to interview individuals who've had experience within all sectors. Therefor the best participants would be the tertiary sector

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Research Purpose/ Objective	Primary Research Question	Research Rationale	Seminal Authors/ Sources	Literature Review – Conceptual Frameworks	Paradigm	Approach	Data Collection Methods	Ethics	Anticipated Findings	References
The purpose of this research is to look at the existing uses of indoor environmental quality in South African schools and examine how they affect student well-being. By investigating the consequences, we may identify methods to make the environment safer and more user-friendly for students, therefore benefiting their well-being.	How can indoor environmental quality principles (IEQ) improve the well-being of student in the primary educational sector within public schools in South Africa?	Analyzing the environment we are within is important and allows us to learn and understand that there are better ways of interacting with our space. The relevance of the study is there to create a better student environment through the use of interior design to stimulate growth and development and optimal working conditions,	(HealthCare, 2008). (Jolla & Zimmer, 2014). (Zeyad, Tarek & Sara, 2017). (Nurlelawati, Rodzyah & Normahdiah, 2011).	LITERATURE RELATING TO EVIDENCE BASED DESIGN LITERATURE RELATING TO THE INTERGRATION OF HUMAN-CENTRED DESIGN IN EARLY STAGES LITERATURE RELATING TO THE IMPACT OF COLOUR ON HUMAN BEHAVIOUR	Postivism Inductive Qualitative Ethnography Interview/ Questionnaires Cross-sectional Data analysis and collection	Qualitative Inductive	Method usage is Case studies Interview/ questionnaires	Interview's questionnaire will be proved to anonymous individuals to get different perspectives with consent of the individual and or supervisor	Indication that IEQ and Adaptive reuse within south African interiors do create a better environment for users of the space.	GSA, 2007 Ecolife, 2011 SpringerLink. 2017 Issuu, 2017 KernandCo, 2019 Careerfoundry, 2021 Sambiasi S, 2019 Alisha P, 2017 StatisticsHOW, 2008 Nada I, 2001 (HealthCare, 2008). (Jolla & Zimmer, 2014). (Zeyad, Tarek & Sara, 2017). (Nurlelawati, Rodzyah & Normahdiah, 2011).

Research Problem	Secondary Questions/ Hypotheses Objectives	Key Concepts	Key Theories	Population	Sampling	Data Analysis	Limitations	Anticipated Contribution
The traditional orientated classroom design focuses more on functionality. To some, this will be problematic and minimizes the well-being of the students because of how we are influenced by the environments surrounding us. This can lead to a decrease in students' work performance and can create health and mental instability.	• How can one design for well-being within a primary educational sector?, Specifically in relation to public school. • How can the impact of sick building syndrome affect student productivity? • What areas within the student space, require more attention and why? • How can the implementation of colour and materiality affect the cognitive ability of students?	Sick Building syndrome Designing for Well-Being Colour and Materiality Aplication	The research Onion Structure Indoor Environmental quality Framework Process of Human - Centred Design	Maximum of 6 users	Non – Profit Sampling Volunteering Purposive	A qualitative data analysis with be used and as shown in the research paradigm. A Qualitative data is frequently subjective, rich, and comprises of detailed information that is typically given in the form of words	Inductive approach: There is relatively minimal inductive reasoning. It starts with a single observation or conclusion from extremely precise and similar circumstances Access to students: big limitation is the access to the students needed to conduct the interview for the study is being conduct during the COVID-19 Pandemic which overall limits the accesses to the students	Hopefully, the study will contribute towards the existing theories by showing the benefits of including IEQ with the interior design practice

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PART ONE

RESEARCH ASSIGNMENT

"Wellness focused interior design is an on growing design ethos; it realises that residential and commercial spaces can greatly influence our physical health, as well as our emotional state of mind" (MindTheInterior, 2019)

1.1 INTRODUCTION

The traditional orientated lecturer room design focuses more on functionality. To some, this will be problematic and minimizes the well-being of the students because of how we are influenced by the environments surrounding us. This can lead to a decrease in students' work performance and can create health and mental instability.

When the South African education system was examined, it became obvious that the system was broken, with badly performing instructors, bad work ethics, a lack of community and family support, inadequate supervision by education authorities, insufficient support for teachers, and very low levels of accountability (Mouton, N et al. 2013). These problems also impacted student morale, as evidenced by a lack of discipline, severe violence in schools, low moral standards, truancy, absenteeism, lateness, and high dropout rates from Grade 1 to Grade 12, as well as very poor performance in important subjects such as Mathematics and Literacy (Mouton, N et al. 2013). These negative effects can as well be found within the private higher educational institution.

Design thinking/education is an important topic that should be introduced to all learning environments for the goal of design thinking is to solve issues (Connie, Lui. 2015). Design education thus include teaching students design thinking skills and training them to be outstanding problem solvers. Students begin by learning the subtleties of an issue, brainstorming potential solutions, and developing new goods and experiences (Connie, lui. 2015).

1.2 THE BACKGROUND TO THE RESEACH PROBLEM

The purpose of this study is to make us as human-beings aware of how we are affected by the choices of design we implement, especially in our early stages of development where our cognitive and sensory learning ability is at its peaks. There for it is critical that we understand how students' performances is affected by the environmental they are within and show them why design is all about finding solutions to issues that are not always your own (Connie, lui. 2015).

Design, on the other hand, requires students to acquire the attitude of their intended audience. Students have the opportunity to observe the world from a different viewpoint and explore the problems that others experience via activities such as interviewing individuals and walking through the lives of strangers. This teaches empathy, which is useful in both life and business. It teaches students how to get a deeper knowledge of the people around them and how to form deeper connections (Connie, lui. 2015).

It is therefore important to study and analysis the environment we are within and to determine whether that environment is suitable for personal well-being and growth. The way in which we can achieve this is by looking at the early stages of development, especially in the private higher educational institutional system.

1.3 PROBLEM STATEMENT, RESEARCH QUESTION, AIMS AND OBJECTIVES

1.3.1 Problem Statement.

The conventional oriented lecturer-room design places a greater emphasis on utility. To others, this will be troublesome and will limit students' growth and development because of how we are impacted by our surroundings. This can have a negative impact on students' work performance as well as their physical and emotional well-being.

The purpose of this research is to look at the existing uses of IEQ in private higher educational institutions and examine how they affect student well-being. By investigating the consequences, we may identify methods to make the environment safer and more user-friendly for students, therefore benefiting their well-being.

1.3.2 Research Questions (Primary and Secondary).

Main Research Question

How can indoor environmental quality principles (IEQ) improve the students' experience/perception within the private higher educational institution

Secondary Research Questions/Sub-Questions

- How can the impact of sick building syndrome affect student productivity?
- What areas within the student space, require more attention and why?
- In what way can we address the negative effect of sick building syndrome through the IEQ principles?

1.3.3 Aims of the Research.

The aim of this research is to look at the latest applications of indoor environmental quality in private higher educational institutions and see how it affect student experience/perception. By investigating the consequences, we will identify ways to make the experience better and more user-friendly for students, thus benefiting their experience and perception.

1.3.4 Research Objectives

- The major goal is to comprehend the existing standards in the private higher educational environment and evaluate whether it is beneficial or harmful.
- Determine the impact of the interaction between students and interior settings and assess if the outcome is favourable or unfavourable.

- Identify the prevalent difficulties in the present lecturer-room interior design that would require modifications to meet the demands of the students.

  It is essential Analysing our surroundings is essential because it helps us to learn and comprehend that there are better ways to engage with our surroundings. The study's relevance is to create a better student environment through the use of interior design to stimulate growth and development and optimal working conditions. In my opinion, we need to conduct a critical analysis of indoor environmental quality in order to determine the effects on students' experience/perception within the lecturer-room environment and provide solutions based on our finding.

1.4 METHODOLOGY, OVERVIEW OF THE RESEARCH

1.4.1 Research Paradigm

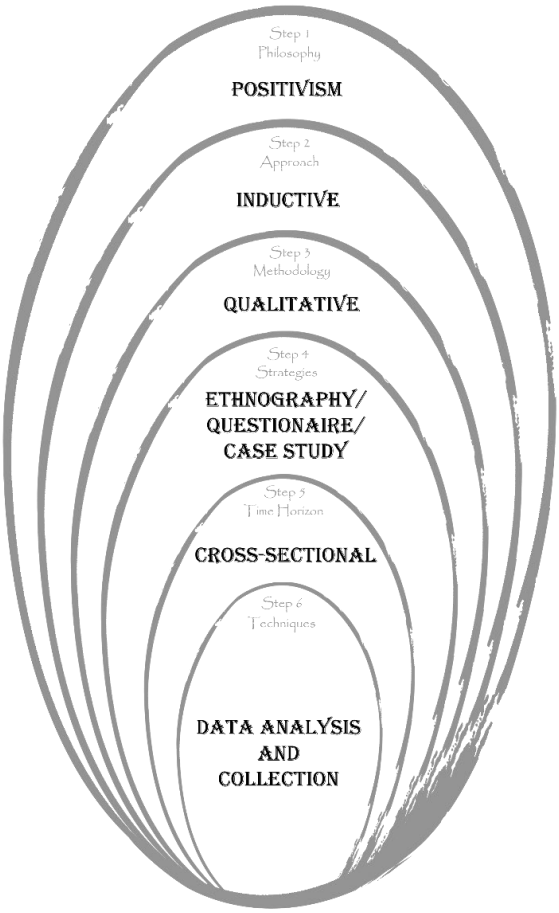


Figure 1. Research Onion Diagram from Saunders' et al (Crossley, J. 2021)

Step 1: Positivism Philosophy - The research has limited me to data collection and from this, I will need to interpret it in an objective way for the information comes from uses experience/perception of the physical environment.

Step 2: Inductive Approach - The research requires me to find patterns within the study in order to determine similarity.

Step 3: Qualitative Methodology – This will require me to conduct my study within natural setting. This being the private higher education institutional sector.

Step 4: Questionnaire, Ethnography and Case Study strategies – In order for me to determine that result of my research. A series of questionnaire and case studies a necessary toward the overall findings

Step 5: Cross sectional Time Horizon – The type of population that will be selected for research will consist of individual that area currently within the private higher educational institutional sector.

Step 6: Data Analysis and Collection Techniques – Series of questionnaire will be provided to certain groups within the private higher educational institution.

1.4.2 Scope of the Sampling

This study's access population consists of students within a private higher educational institution. A non-probability sampling approach will examine two groups of students to see which groups are more knowledgeable of the research (QuestionPro, 2021). Based on the students' understanding of the environment there're within and +how it affects them, a deliberate sampling approach will be used. In addition, an extra group of students will be chosen in order to collect data on participants who are aware of the effects in order to evaluate whether we understand how our experience/perception of the private higher educational institution affect us (QuestionPro, 2021).

1.4.3 Data Collection Methods

In order to fulfil the investigated population criteria, a mix of cases and interviews must be done in order for the study to be effective. All data will be gathered from reliable sources and seminal writers. Graphs and diagrams will be used to supplement the information presented in the case studies. The majority of the content is derived from reputable online sources such as trustworthy publications and thesis postings.

1.4.4 Data Analysis Methods

A qualitative data analysis with be used and as shown in the research paradigm. A Qualitative data is frequently subjective, rich, and comprises of detailed information that is typically given in the form of words (Physician FM, 2008). Analysing qualitative data requires analysing a large number of transcripts for similarities and differences, then identifying themes and establishing categories. Traditionally, researchers categorize data by ‘cutting and pasting' and using coloured pens (Physician FM, 2008). The majority of qualitative research results in unstructured text-based data. Interview transcripts, observation notes, journal entries, and medical and nursing records are all examples of textual data. In certain situations, qualitative data may also contain graphical displays, audio, or video clips (for example, audio and visual records of patients, radiological film, and surgical films), or other multimedia resources (BRM, 2008).

PART TWO

LITURATURE REVIEW

2.1 INTRODUCTION

In order to conduct this literature review. We would need to view the work methodically and evaluate our research findings. To begin, we must examine our research paradigm, which focuses on six key steps in order to successfully structure the research documents (Thesismind, 2019). From here, we will examine key theoretical frameworks and foundations that will be examined in order to successfully evaluate our findings, as well as key concepts within those frameworks in terms of areas of focus, that are more relevant to the study, and finally critically analyse seminal authors works and how it links in with the problem in which I am researching.

The aim of the literature reviews is to gain a better understanding of how indoor environmental quality affects the student experience/perception of IEQ within the private higher education institution. To gain an understanding, we must examine seminal authors' works that are related to our research problem.

Firstly, we will examine studies in evidence-based design to gain a better understanding of EBD and how it impacts users in the environment, as well as to consider how evidence-based design methodology can be used, and compare current works to seminal authors, and finally to link our results to the research issue we are working on and why the literature is relevant.

Second, we will have to assess human-centred architecture and its integration in the early stages of design, as well as how/why design affects us as users. Furthermore, we would compare secondary sources to identify the parallels and differences between the works of seminal authors, so that we can apply it to what we are studying and how it is related to our issue as we do further study.

Thirdly, we need to look at studies on users' perception of colour and materiality in order to determine the impact on the user and how it influences our processing abilities and behaviours. Secondary sources would be reviewed in order to compare and contrast information to the work of the seminal author, allowing us to decide if the information is important to the research. In particular, the students' backgrounds and how they are influenced by colour

2.2 THEORECTICAL FRAMEWORK & FOUNDATION

2.2.1 The Research Onion Structure.

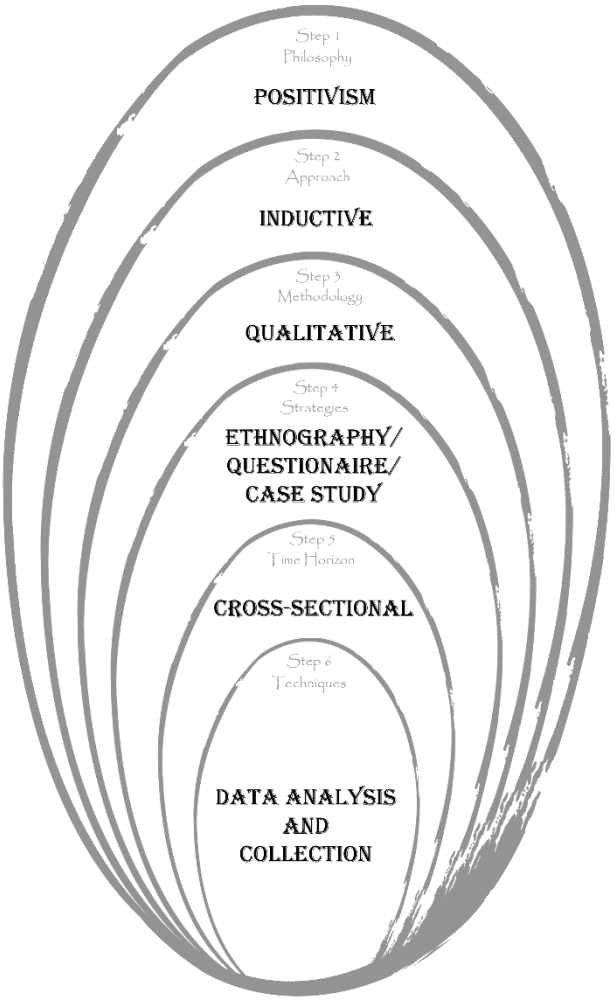


Figure 2. Research Onion Diagram from Sauders' et al (Crossley, J. 2021)

Saunders' et al (2007) Research Onion - describes the various choices you must make when designing a research approach, whether it be for your thesis, dissertation, or some other structured research project. The process works from the outside of the onion, inwards (Jenna & Derek, 2021). It is a useful tool for considering methodology in a holistically way and assists you in understanding the choices you must make in terms of your study design (Jenna & Derek, 2021).

The study focuses on the relationship of student's experience/perception of IEQ at private educational institution . In order to compile the study. A literature review will need to be conducted, which focuses on analysing, EBD, Human-Centred Design, effects of colour on human behaviour and how it plays a role on the student experience/perception, specifically within private higher educational institution.

2.2.2 Indoor Environmental Quality Framework.

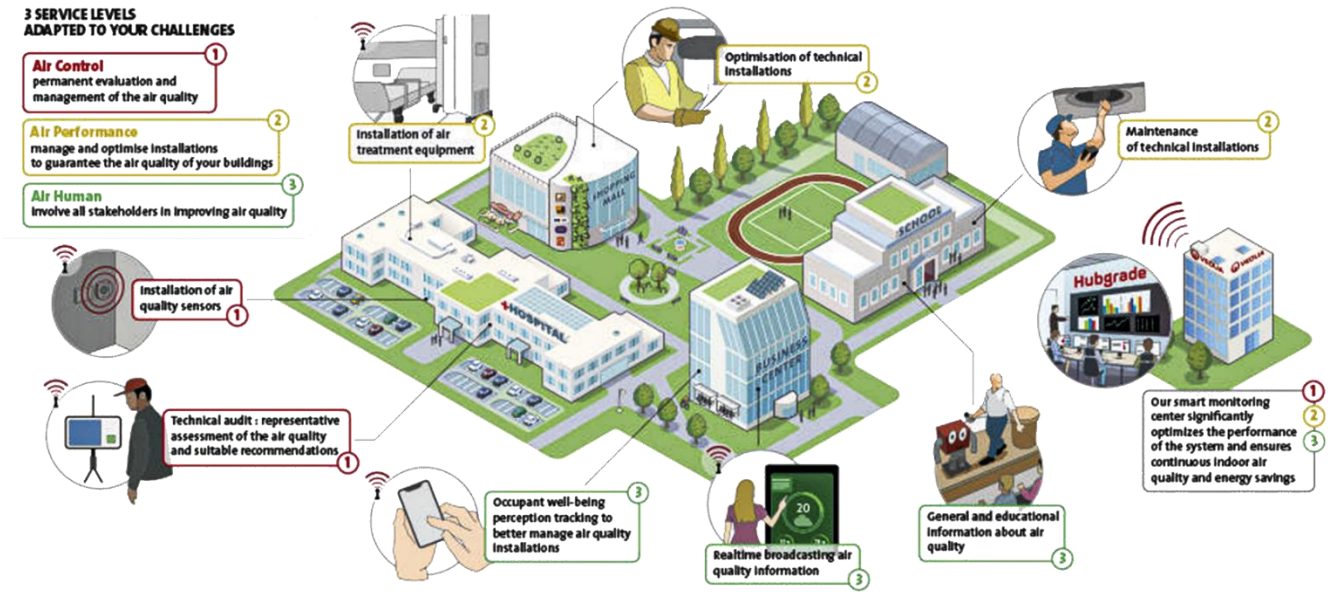


Figure 3. The Veolia Solution (FightingClimateChange, 2004)

Indoor Environmental Quality (IEQ) as described by CDC.gov refers to the quality of the atmosphere of a building with respect to the hygiene and health of its users (NIOSH, 2013). Many variables influence IEQ, including ventilation, air quality, damp conditions, ergonomics, microorganisms, and Hygiene (NIOSH, 2013). Individuals are also worried that they have complications or health problems as a result of exposure to pollutants in the workplace (NIOSH, 2013).

Building inhabitants may be exposed to a multitude of chemicals (in the form of gases and particles) from office equipment, construction operations, cleaning supplies, carpets and furnishings, water-damaged building materials, perfumes, tobacco smoke. A build-up of microbial growth (fungal, mold, and bacterial) will occur because indoor conditions are highly dynamic (NIOSH, 2013).

The understanding of IEQ and how we analysis existing/new structures is highly important and must follow a systematic approach in order to cater towards improving the experience/perception of the students within the private higher educational institutions, for existing designs follow a more functional approach because of the idea to get more quantity over quality.

2.2.3 Process of Human-Centred Design

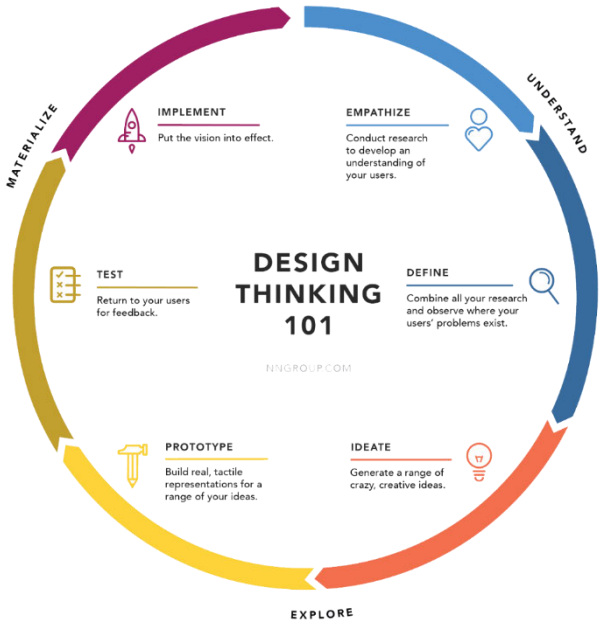


Figure 4. The design-thinking framework (Sarah, 2016)

Human Centred Design is described as a collaborative approach to problem-solving that begins with people and concludes with unique solutions that are tailored to their specific requirements (IDEO, 2018). The key to finding out what humans really want falls under two things:

Observing user behaviour - observe people to try to understand them (IDEO, 2018).

Imagining yourself in the shoes of the end-user - comprehend the true nature of the user experience (IDEO, 2018).

"When you understand the people, you're trying to reach—and then design from their perspective—not only will you arrive at unexpected answers, but you'll come up with ideas that they'll embrace" (IDEO, 2018).

This is the basic philosophy around which human-centred architecture circles. The method is the same when you are developing physical or digital solutions, and it consists of six stages.

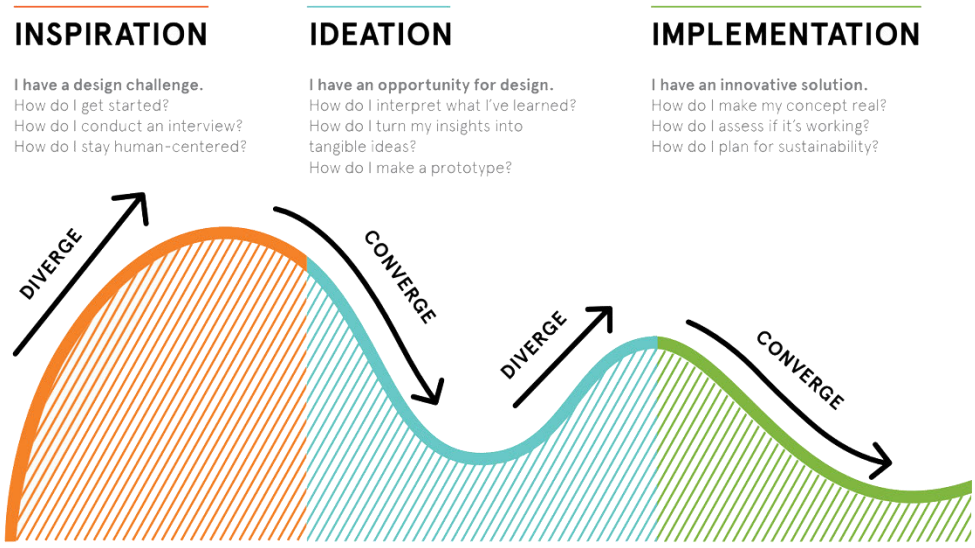


Figure 5. Design Thinking, HCD and UX (Dan, 2016)

Stage 1: Engage & Observe Behaviour - gaining as much information about the end-user as possible (VoltageControl, 2020).

Stage 2: Ideation - Create a list of suggestions based on what you have heard and seen (VoltageControl, 2020).

Stage 3: Prototype - Rapid prototyping allows you to bring your best designs to life (VoltageControl, 2020).

Stage 4: **Feedback** - You must determine if the concept is appropriate for the individuals for which you are planning (VoltageControl, 2020).

Stage 5: **Iteration** - This is a flexible process of integrate, measure, and replicate until you have arrived at the best iteration of your concept. It is time to discuss the solution until it is completely formed and replicable (VoltageControl, 2020).

Stage 6: **Application/Implementation -** It is important to keep an eye on shifts in your target audience's expectations and preferences as time passes so that you can make appropriate changes to your design. Return to step one for each new upgrade and repeat the procedure in order to receive optimal performance (VoltageControl, 2020)

Human-Centred Design is relevant when it comes to determining the IEQ experience/perceptions of students within the private higher education institutions, for it allows us to involve the students within the design process, in order to come up with a suitable solution, in regard to the effects of IEQ within the lecturer environment. This process is on-and-off but overall brings forth the best possible solutions.

2.3 CONCEPTUALIZATION

2.3.1 Sick Building Syndrome.

(Also known as occupational illness, building-related illness [BRI], or multiple chemical sensitivity [MCS]) is considered by some physicians to be a disease that affects some individuals after they are exposed to as-yet undefined chemical, biochemical, or physical agents that are believed to be present in buildings (Charles & John, 2021)

The skin, respiratory, and neurological processes may all be affected by SBS symptoms (Kristeen, 2018). However, there are several culprits behind SBS such as Poorly ventilated houses, such as classrooms, workplaces, and public spaces, rooms with insufficient lighting, low humidity or heat, loud work environment etc (Kristeen, 2018).

This concept relates back to the principles of indoor environmental quality and will be further evaluated within the evidence-based design review in order to determine its relevant to my research.

2.3.2 Designing for Well-Being.

Designing for Well-Being is better seen as a pattern of relationships that is constantly adapting, rather than as a 'thing' that can be planned. Wellbeing necessitates an ongoing collaboration, one that occurs in tandem with individuals and location (Ash, 2016). Some of these collaborations are physical and biological in nature, such as access to nutritious food and being outside, while others are social and cognitive in nature, such as cooperation and possessing strong feelings (Ash, 2016).

Figure 6. Designing for Well-Being (DFWB, 2020)

Ways in which we can design in order to create Well-Being for users:

Natural and artificial lighting - A successful daylighting plan illuminates the building room adequately without exposing inhabitants to glare or significant changes in light levels, which can impair comfort and efficiency (GSA, 2008)
Thermal Comfort - Offering individual occupants' autonomy of their immediate surroundings would increase occupant satisfaction (EHDD, 2013).

Indoor air quality - Indoor emissions can be significantly minimized, if not eliminated altogether, with minimal to no heat leakage to the great outdoors (Jane, 2020).

Happiness - The state of one's wellbeing is a strong predictor of happiness. Happiness can be enhanced by strategies that improve human wellness, such as offering healthy food and opportunities for exercise. (EHDD, 2013).

Biophilia - Biophilic architecture has a clear and observable effect on occupant wellbeing and well-being as used in ventures (EHDD, 2013).

All key aspect within design for Well-Being corelate to Human-Centred Design. Which means that in order to create better experience/perception for student within the higher educational institution. We will need to include students in the above steps and view their side of the situation, and finally come up with iteration to see what works and what does not.

2.3.3 Colour and Materiality Application

Colours have the ability to alter our mood, concentration, and mental wellbeing (Abigail, 2020). Green, yellow, red, and blue are the four primary colours that have the greatest impact on us and serve as an emotional compass. They are sometimes grouped into warm (red, orange, and yellow) and cold (blue, green, and purple) colours (lilac, blue and green) (Kinnarps, 2021).

Each colour triggers a different response:

Green - represents nature and is associated with well-being, youth, safety, and environmental consciousness (Kinnarps, 2021).

Yellow - We also equate the universal solar sign with hope, excitement, and warmth (Kinnarps, 2021).

Red - stands for energy, zeal, strength, and force; however, in human settings, it should be used with caution (Kinnarps, 2021).

Blue - Blue has a calming effect on the mind, leading it to rest and relaxing. It is a colour that allows us to breathe more deeply and blink less often (Kinnarps, 2021).

The concept approach links in with Human-Centred Design as well as IEQ for the study can be implemented with the design outcome to benefit the student's experience/perception of IEQ within the private higher educational institution.

2.4 ASSOCIATING THE RESEARCH TO THE PROBLEM STATEMENT

2.4.1 Linking the work

Unfortunately, private higher educational institutions focus on a functional system that focus on as many students in the school, especially in the primary education sector. This is an issue because it has a generalized system for all students, which is not necessarily suitable for all individuals as each person works and develops in their own unique way, so it is criterion-based (Teresa, 2005).

As a result, it is vital to consider how we can redesign the learning environment, especially in private higher educational institutions, to benefit students' experience/perception in the tertiary educational field. Furthermore, we must examine theoretical frameworks to help us design in a more concrete manner, as well as examine main elements within particular contexts that are more important in developing student well-being.

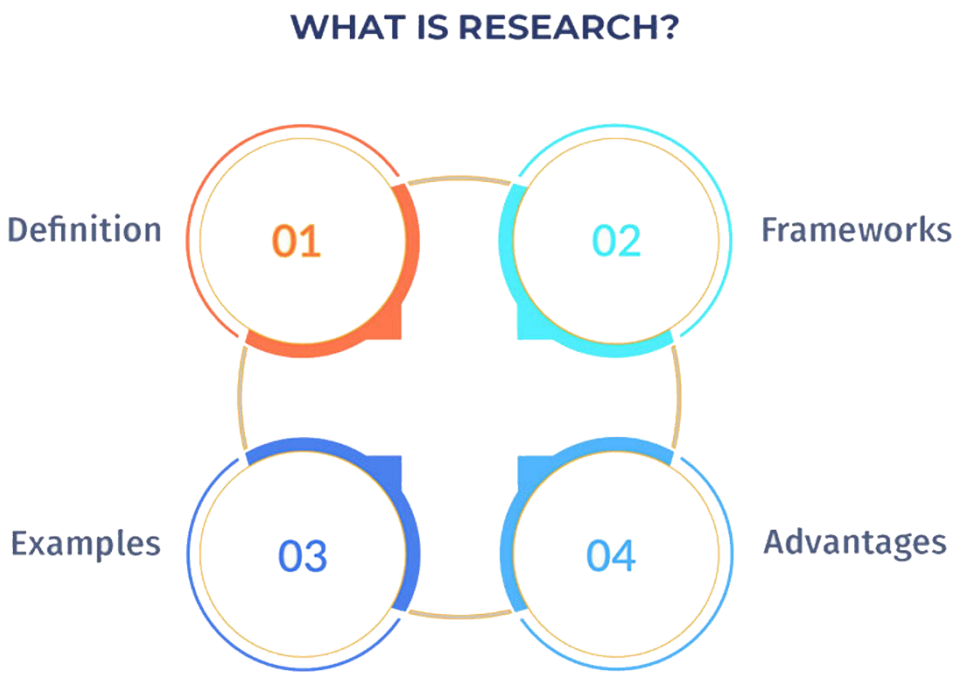


Figure 7. Conceptual Research: Definition, Framework, Examples and Advantages (QuestionPro, 2020)

2.5 LITERATURE REVIEW

2.5.1 LITERATURE RELATING TO EVIDENCE BASED DESIGN

Evidence-Based Design or EBD is a method of basing decisions regarding the built environment on credible analysis in order to produce the best possible results. This is known as evidence-based architecture (HealthCare, 2008). The idea behind EBD starts by solely concentrating on studies involving the building environment or in a broader sense, as neuroscience or lean architecture research, or a variety of healthcare system research projects aimed at improving patient outcomes (Jolla & Zimmer, 2014). To increase health and patient safety, EBD goes far beyond the dimension of the healing environment to understand the impact of the built environment on patient clinical health in the areas of personnel stress and exhaustion, patient stress, hospital operating performance and productivity (Jolla & Zimmer, 2014).

Key research has been conducted to determine the success ways of practicing EBD within the spaces. These consist of:

- Collaboration with the client/users that is meaningful (Jolla & Zimmer, 2014).
- Recognizing and adapting to each project's particular meaning (Jolla & Zimmer, 2014).
- Using the most reliable information available from a number of sources (Jolla & Zimmer, 2014).
- Using logical reasoning/Critical thinking to interpret the research's consequences for design decisions (Jolla & Zimmer, 2014).
- Respecting a fundamental trust to safeguard public safety and welfare (Jolla & Zimmer, 2014).
- Commitment to sharing discoveries with the entire world (Jolla & Zimmer,

These finding prove to be relevant to my identified problem for it is a process of evaluating a space and determining whether the environment Is right for the students. If not the idea behind evidence-based design is to then analysis the situation again, reshape and make adjustment in order to get the best possible results (Jolla & Zimmer, 2014).

Example of EBD in a school environment:

The place of EBD in education began with school lighting in 1999. This investigation comprised 2,000 classes in three school districts and tested the mathematical and reading skills of about 21,000 students (Steven Wayne Burnett, 2010). Natural light sources were proven to have a favourable impact on student results in classrooms. However, there is a "growth of information that lies between colour and child-like behaviour, classroom design that provide efficient instruction and materials are finished safe (Steven Wayne Burnett, 2010).

Because various colours impact our emotions, it is particularly important to keep them controlled within the classroom. For example, blue and red regions can be created to differentiate between low and red regions spaces with strong energy. This is coupled with the development of effective and fluid designs, as children hear just 75% of what is spoken in ordinary classrooms (Steven Wayne Burnett, 2010).

It is simpler for students to learn; study and engage with the way they work best with the various workspaces. Even air and ambient temperatures can have harmful impacts on the pupils, as poor air quality or excessively hot or chilly classes might result in poorer grades (Steven Wayne Burnett, 2010).

One of the more in-depth components of IEQ and EBD is Sick Building Syndrome. The term "sick building syndrome" (SBS) refers to cases in which building inhabitants suffer temporary health and comfort symptoms that tend to be related to time spent in a building, but no underlying disease or cause can be determined (Charles, 2018).

Figure 8. Structure within EBD (David, Bryon & Anjali, 2019)

Research has been conducted on the symptoms reported by building occupants (Charles, 2018). Headaches, eye, nose, and throat inflammation, dry cough, dry or itchy skin, dizziness and nausea, difficulties focusing, weakness, and odour sensitivity are among the issues reported. The majority of the complainant's express satisfaction after exiting the house. These issues are directly linked to principles within IEQ such as air and water quality, microorganism, and implementation of hygienic surfaces (Muhammad, 2018).

Private higher educational institutions will need to evaluate their current state and locate the specific areas that effect the student experience/perception by using IEQ or in more depth, Sick Building syndrome. By looking at these theorical frameworks and concepts. Private higher educational institutions can re-iterate the design in order to produce the best possible solution for the student Well-Being based on current evidence.

2.5.2 LITERATURE RELATING TO THE INTERGRATION OF HUMAN-CENTRED DESIGN IN EARLY STAGES

The term "human-centred development" refers to the inclusion of end users in the design process. HCD developed as a result of the human-centred interface methodology, which began in the technical and product system sectors and eventually led to Interactive Architecture (Zeyad, Tarek & Sara, 2017). This corelated to EBD and its plans the develop a space in order the get the best possible solution for the user within the environment (HealthCare, 2008).

Human-Centred Design has the ability to evaluate the interests, convictions, motives, and shortcomings based on how people perceive, act, and experience, while also taking their society and social norms into account (Zeyad, Tarek & Sara, 2017).

In a tertiary environment:

Education has never had one objective. It is not an optimum method for a single result, as it is not a product that can be developed with a perfect balance of form and function (Edw, 2016). It is part of the difficulty of education and art and science: it concerns the quality of the process - it establishes communities and connections - as it concerns the quality of the product (Edw, 2016). At its heart, education management aims to balance the needs of many players in the fairest possible manner. An additional difficulty is that these demands frequently only exist in the abstract - as there is little to say about rights or rights - since the framework is created (Edw, 2016).

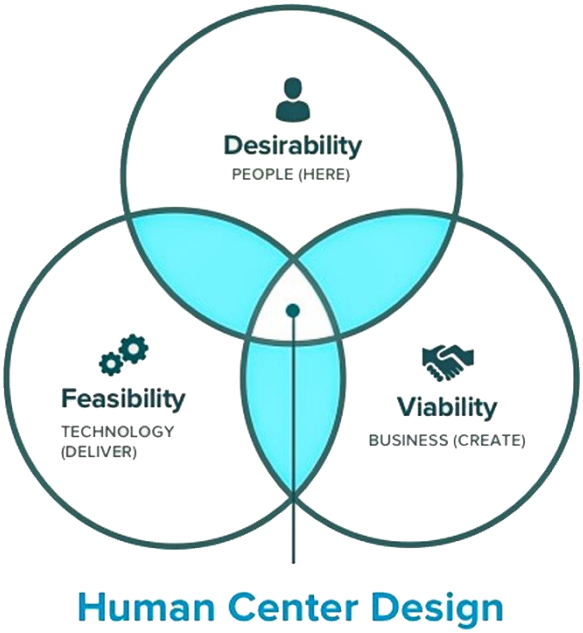


Figure 9. HCD Structure (Dheeraj, 2020)

The key to finding out what humans really want falls under two things:

Observing user behaviour - observe people to try to understand them (IDEO, 2018).

Imagining yourself in the shoes of the end-user - comprehend the true nature of the user experience (IDEO, 2018).

My study will address the issues within design for well-being by gaining feedback by the students and their experiences in the learning environment. In doing so this recognises the benefits of human centred design as way if improving the student's experience/perception within the private higher education institutions.

2.5.3 LITERATURE RELATING TO THE IMPACT OF COLOUR ON HUMAN BEHAVIOUR

The colour is used in interior design as the easiest material for changing environmental characteristics and is most noticeable (Nurlelawati, Rodzyah & Normahdiah, 2011).

Despite offering the space character, colour is also helpful in shaping our human behaviour, decision making, wellbeing and many more. In other words, colour is a subtle stimulus that has a significant emotional, social, biochemical, and sociological effect on human lives every day (Nurlelawati, Rodzyah & Normahdiah, 2011).

Investigations have shown that colours will change our attitude, focus and mental well-being (Abigail, 2020). The four main colours that influence and shape our emotions are:

Green - Green is intended for stress relief and healing as well as Frequently represents humanity and the material world. It is often considered to reflect serenity (Kendra, 2021).

Yellow - is often thought to be a high-energy pigment. It is often used in scenarios and items that aim to elicit a feeling of enthusiasm or vigour. It is vivid and catches the eye right away. Its energy can be brash and forceful, or it can be raw, intense, and intimidating (Kendra, 2021).

Red - In a non-literal sense, red is often used to express threat. It's also associated with lust, devotion, and passion (Kendra, 2021).

Blue - is a soothing color that also reflects sincerity, commitment, goodwill, and even spirituality (Kendra, 2021).

Colour interpretation can be influenced by cultural factors and can change the context of the messaging and brand awareness. Colour is often used by graphic designers, photographers, Interior designers, and advertisers to

manipulate users, so it's important to be mindful of the cultural connections that colour can have (NCD, 2017).

Figure 10. Exploring Color Psychology (Cameron, 2020)

Journal of Experimental Psychology conducted a report on this and discovered that the colour red had a negative impact on test results (Cameron, 2020). When assigned a red participant number (rather than a green or black one), participants performed 20% lower on tasks than their peers. That is a big difference, because it can be used to influence the user experience (Cameron, 2020).

This study directly links to the research topic by looking at the effect of colour on the individual and how it can change emotional responses and well-being based of how we apply colour within or environment. This is a part of indoor environmental quality which make it a valuable resource in order to evaluate the student's experience/perception of IEQ within the private higher educational institution.

2.6 CONCLUSION

Indoor environmental quality is the first steppingstone in order to create well-being for users within their environment (Students in higher educational institution) and is important to be analysed beyond its general form, for IEQ is not just about basic principles of design but can be broken down into several

reelevate studies that overall help toward shown and design a better way of working and living within our environment. In a sense. IEQ helps drive other key theoretical foundations which how to build a foundation for interior design works.

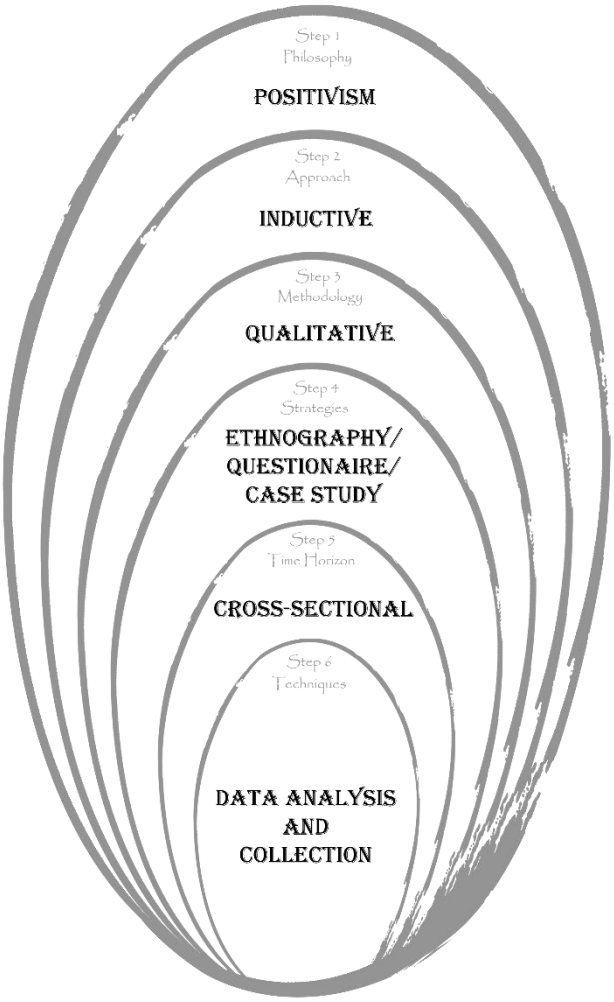
Evaluating how we work and live especially earlier on in our life is critical, for during this period in our life cycle we are more influence by our surroundings. Which alternate means that at this point in time we develop physical and mental attributes and if an individual is placed within an environment that does not suit them, it can develop issues on a personal level. Therefore, it is important to design for our well-being at the start of the user's development stages in order to secure a better future standard.

Ortho the idea behind the research is specifically looking at the effect of indoor environmental quality on students in private higher educational institutions. The research can be applied to other instances outside the educational system. The whole idea is to improve the way in which we develop as people which is the best look at earlier on in our lives.

PART THREE

METHODOLOGY

3.1 DESIGN APPROACH



Research Onion - Saunders' et al(2007) explains the several options you have to select while developing a research strategy for your thesis, dissertation, or some other organized research endeavour. The procedure works from the inside of the onion (Jenna & Derek, 2021).

The study will rely on a data collection method though the student from which will then be interpreted in an objective way in order to determine the main effect on the student well-being.

Therefor the approach will be inductive for the study will look at the individuals' responses they provided and determine the similarities, this will be compiled together in order to evaluate the effect on all student's well-being

The methodology will be qualitative:

Because it contains tiny samples that may not be typical of the larger community, it is seen as not objective, and the results are seen as influenced by the researchers' personal experiences or beliefs, qualitative research is usually viewed with mistrust and deemed lightweight (Hammarberg, 2016). In qualitative circles, quantitative research is often criticized for oversimplifying individual experiences in the sake of generalization, failing to account for researcher biases and expectations in research design, and necessitating guessing to grasp the human meaning of aggregate data (Hammarberg, 2016).

Strategies in order to conduct the research:

Questionnaires/Interview:

To minimize misunderstanding of the question, the questions should be asked as written for all responders. For the same reason, clarification of the issue should be avoided. However, if there is a misunderstanding, the questions might be repeated (SocialogyGroup, 2017). The questions should be asked in the sequence specified in the questionnaire, as a specific question may not make sense if the questions preceding it are missed. These questions should be open-end. Interviewers must be very cautious to remain impartial before beginning the interview so that they do not lead the responder, therefore minimizing bias (SocialogyGroup, 2017).

Case studies in regard to Indoor Environmental Quality:

A case study is a research approach that entails an up-close, in-depth, and thorough analysis of a subject of study and its connected contextual situation. They can be made as a result of research (EssayMin, 2018). A case study aids in the understanding of a complicated topic or topic. It might broaden experience or strengthen current knowledge via prior research. Their

contextual analysis focuses on a small set of events or situations and how they connect to one another (EssayMin, 2018).

The reasons for the combination choice are to determine whether there's been enough changes over time or even any changes to the private higher educational institutions as a result we can determine if the changes have created a better student experience/perception of IEQ at a private higher educational institution.

3.2 RESEARCH DESIGN.

If the researcher considers quantitative design to be a spectrum, the one end of the spectrum represents a design in which the variables are not controlled at all and are just observed. Only the connections between variables are described (QuestionPro, 2019). Designs on the opposite end of the range, on the other hand, contain very careful control of variables, and linkages between those variables are clearly defined. With experiment design going from one kind to the other, there is a spectrum in the center that combines those two extremes (QuestionPro, 2019).

A researcher's research design is the framework for the methodologies and procedures he or she will use in doing research. The design enables researchers to focus on research methodologies that are appropriate for the topic matter and so set up their studies for success (QuestionPro, 2019).

An effective study design reduces data bias and promotes faith in the veracity of gathered data. In experimental research, the desired outcome is typically regarded to be a design that yields the smallest margin of error.
Essential Elements:

- True purpose statement
- Techniques should be used for data collection and analysis in research The technique to be used for data analysis
- Methodology of research
- Probable research objections
- The research study's settings

- Timeline
- Analytical measurement

3.3 POPULATION.

With regard to the entire population sample, the interest units tend to have certain not very common traits (Laerd, N.D). However, because we are interested in these traits, they affect our choice of population sampling. It is essential to notice that only some of the features are not extremely frequent (Laerd, N.D).

Because complete population sampling includes all members of the population of interest, it is feasible to gain in-depth insights into the phenomena of interest. With such broad coverage of the population of interest, there is less chance of missing possible insights from individuals who are not included (Laerd, N.D).

GROUP A 1	The first group of students selected for the research, were 3rd and honours students in a private higher education institution, that were currently studying degrees outside the fields of interior or architectural design in order to acquire their experience/perception of IEQ within their working environment: Reason: The idea was to get input from individuals with very little to zero understanding of IEQ to see whether they were aware of how their environment affect them.
GROUP B 2	The second group of students selected for the research, were 3rd and honours student in a private higher educational institution, that were currently within the field of interior design in order to acquire their experience/perception of IEQ within their working environment. Reason:

	The idea was to get input from individuals with a wide understanding of IEQ to see whether they were aware of how their environment affect them.

3.4 SAMPLING

Purposeful Sampling:

In qualitative research, intentional sampling is also known as selected sampling or purposive sample and is used to recruit people who can offer in-depth and specific information about the phenomena under study (laerd, 1998). To qualify for the research study, each participant must satisfy certain requirements set out by the qualitative researcher. It is a collection of non-probability sampling approaches. According to the researcher's judgment when it comes to picking the units to be examined (e.g., individuals, cases/organisations, events, bits of data), purposive sampling is also called judgmental, selective, and subjective sampling. It is common for the sample size to be relatively small (laerd, 1998).

Benefits:

- A wide number of qualitative research designs are available for researchers to choose from. A variety of sampling strategies and techniques are required to meet the objectives of qualitative research designs (laerd, 1998).
- There are many different types of purposive sampling procedures, and each has a distinct objective, but they can offer researchers with justification to generalize from the sample that is being researched (laerd, 1998).
- Research designs that are based on qualitative data might have several phases, with every new phase building on what came before. Such situations may necessitate the use of various sampling techniques at each step (laerd, 1998).

Non-Probability Sampling:

Non-probability sampling is a sampling strategy in which the researcher chooses samples based on his or her subjective assessment rather than random selection. It is a more lenient technique (QuestionPro, 2021).

Not all individuals of the population have the same chance of being selected for the research in non-probability sampling. This means that each person in the population has a known chance of getting chosen (QuestionPro, 2021). It is particularly helpful for exploratory research, such as a pilot survey (deploying a survey to a smaller sample compared to pre-determined sample size). As a result of time or expense constraints, researchers employ this approach when random probability sampling is not feasible (QuestionPro, 2021).

The study accessed population consisting of students within a higher educational institute. A non-probability sampling approach was used to examine two groups of students to see which groups are more knowledgeable of the research (QuestionPro, 2021). Based on the students' understanding of the environment they are in and how it affects them, a deliberate sampling approach was used aswell. In addition, an extra group of students was chosen in order to collect data on participants who had some sort of experience/perception of the effects, in order to evaluate our understanding aswell as to see how we are impacted by the higher educational institute environment (QuestionPro, 2021). Both main and secondary techniques of sampling were used to divide the two groups.

Two groups of students are the major sampling technique for the study.

- The first sampling method was to obtain two groups of students within a higher educational institution.

- The secondary sampling method will consist of cases studies that focus on principles within the Indoor Environmental Quality the first being the study of

evidence-based design in the healthcare system the research involves the building environment or, in general, as neuroscience or lean architecture research or a range of initiatives in the field of healthcare systems to improve patient results (Jolla & Zimmer, 2014).

3.5 DATA COLLECTION METHODS

As a researcher, you must gather and analyze data from all relevant sources to find answers to your research questions and test your hypotheses, as well as to assess the results. Secondary data gathering techniques and primary data collection methods can be separated.

Data collection is broken into two categories:

Primary Data Collection - Contrarily, qualitative research methodologies do not rely on statistics or computations. Language, noises, feelings, colors, and other non-quantifiable factors are essential to qualitative research (BRM, 2008). Using qualitative approaches for data collecting (interviews, questionnaires with open-ended questions, focus groups, observation, game or role-playing scenarios and case studies) allows for a deeper degree of knowledge (BRM, 2008).

Secondary Data Collection - In other words, secondary data refers to information that has previously been published in a variety of sources including but not limited to books, newspapers, magazines, journals, and internet portals. Most business studies research areas have a wealth of information available in these sources (BRM, 2008).

In order to fulfil the investigated population criteria, a mix of cases and interviews were researched and constructed in order for the study to be effective. All data was gathered from reliable sources and seminal writers. Graphs and diagrams were used to supplement the information presented in

the case studies. The majority of the content was derived from reputable online sources such as trustworthy publications and thesis postings.

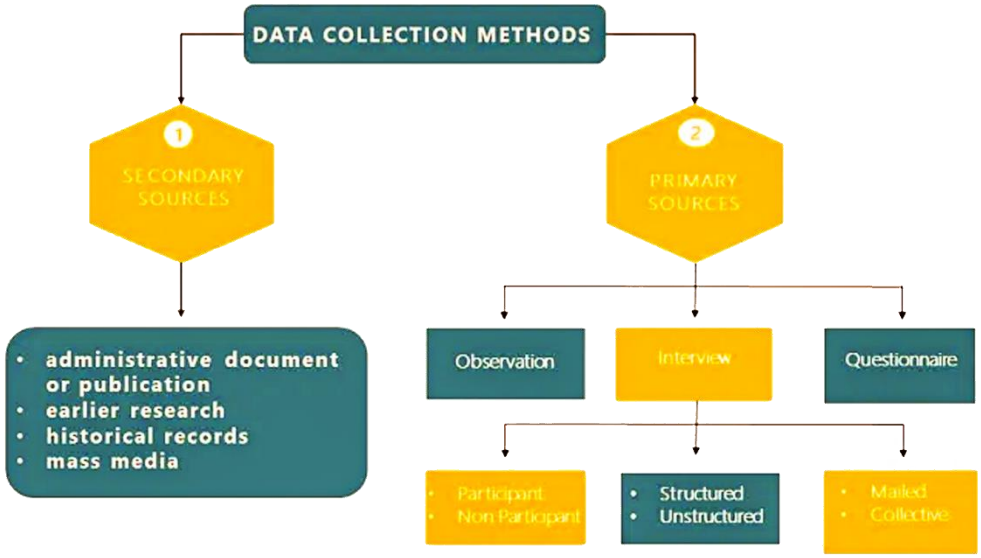


Figure 11. What is data collection (DataCollection, 2008]

- 3.4.1 Interview schedule

  Process of the interview

- Introductions:

Introduced myself to each student, thanking them for their participation in my field of study

- Body: (Just repeating the process of the study)

Went over the ethical documents again just make sure that they are aware that the interview and research regarding their names and details are confidential and will be anonymous.

It was then mentioned that the interview will only take around 20 -30min and they are welcome to leave at anytime

If they did not understand the question or what was mentioned. They were able to ask question of their own.

Question asking:

Based on the response to the previous section. The start of the interview procced.

Question 1: (Claustrophobic, to dark, to bright etc.)

As a student that has succeeded through the higher educational institute. Would you say the learning environment was difficult or easy in terms of the lecturer-room situation?

Question 2:

If you said in anyway “it was difficult or easy”. Can you elaborate why so?

Question 3: (Indoor Environmental Quality)

Are you aware of the IEQ?

Question 4: (Ergonomics, Sick Building Syndrome, Inclusivity)

Looking at how your lecture rooms are designed. Would you say that they include the principles of IEQ or even have some sort of thought process into IEQ?

Question 5:

Would you agree that each individual have their own unique ways of working? Which in time allows them to grow and develop.

Question 6:

Do you think the lecturer room environment, caters for each person abilities and disabilities?

Question 7:

In regards to your above answer. What area within the lecturer room environment would you say has the biggest effect on the student ability to perform?

Question 8:

If you could be a part of the design process. Would you change anything in regards to the lecturer room environment and if so what might it be?

3.6 DATA ANALYSIS METHODS

A qualitative data analysis with be used and as shown in the research paradigm. A Qualitative data is frequently subjective, rich, and comprises of detailed information that is typically given in the form of words (Physician FM, 2008). Analysing qualitative data requires analysing a large number of transcripts for similarities and differences, then identifying themes and establishing categories. Traditionally, researchers categorize data by ‘cutting and pasting' and using coloured pens (Physician FM, 2008).

The majority of qualitative research results in unstructured text-based data. Interview transcripts, observation notes, journal entries, and medical and nursing records are all examples of textual data. In certain situations, qualitative data may also contain graphical displays, audio or video clips (for example, audio and visual records of patients, radiological film, and surgical films), or other multimedia resources (BRM, 2008).

Data Analysis method used:

Framework Analysis - There are numerous steps to this advanced approach, including familiarization, identification of a thematic framework, coding and charting as well as mapping and interpretations and the way it was done was through Axial coding (BRM, 2008).

Axial Coding - The types of codes are interconnected and linked (BRM, 2008).

How the data was analysis:

First: The interview was conducted and continue over a period of 20min per participant.

Second: The information provided by the participant over zoom call was then transcribed to paper for the information receive from each participant was over 4 pages each.

Third: Each participants transcription was the scanned over several times in order to extract key elements within their responses.

Fourth: Side by side comparison of the participants responses was conducted in order to pull out similarity to achieve a common denomination within the research so that we can deduce what is happening in the private higher educational institution sector.

3.7 VALIDITY, TRUSTWORTHINESS AND RELIABILITY

Assessing the dependability of study findings necessitates researchers and health professionals making judgments about the research's "soundness" in terms of the applicability and appropriateness of the techniques used, as well as the integrity of the final conclusions (Smith, 2015). Qualitative research is regularly chastised for lacking scientific rigour, with inadequate explanation of techniques used, a lack of openness in the analytical process, and conclusions that are just a collection of personal opinions prone to researcher bias (Smith, 2015).

Why it is important to this research:

To make these concepts practical, the extended commitment to build credibility in the field and to triangulate data sources, techniques, and investigators (SEHD, 2020). Thick description is required to establish that the results may be transferred between the investigator and the researchers. Researchers in qualitative research want to ensure that their results are prone to change and instability, rather than to reliability (SEHD, 2020).

3.8 ANTICIPATED

Contributions:

Hopefully, the study will contribute towards the existing theories by showing the benefits of including IEQ within the private higher educational institutions.

Findings:

By adding IEQ principles within our design especially within the early stages of development can overall impact the tertiary student's environment performance based on each individual's response.

3.9 ETHICAL CONCERNS

The study confronts ethical issues at every level of the research process, from design to reporting. These include anonymity, secrecy, informed permission, the possible influence of the researchers on the participants, and vice versa (Physician FM, 2008).

The confidentiality of study participants' information and the anonymity of responders must be respected" (enagoacademy, 2020). However, secrecy is not always guaranteed. For example, if a participant is in danger, we must safeguard them. This may necessitate the disclosure of sensitive information (enagoacademy, 2020).

It is critical that you make it apparent that folks are given enough information to make an educated decision about their involvement (enagoacademy, 2020). Furthermore, you must show that the ethical problems of permission, risk of damage, and secrecy are well stated (enagoacademy, 2020).

In regards to my research:

The idea is to determine how the students see their environment and to evaluate whether they cans feel how it affect them, whether it be in a positive or negative way. The research in not there to bad mouth the current facilities they study within but to analysis the learning environment to see if improvements can be made or not. All research must be respected as well as the tools and people used within the research. The overall idea is to help shift the way we design in order to benefit our growth and development. In doing

so our learning environment has the potential to work with us and not against us.

3.10 LIMITATION OF THE STUDY

Inductive approach:

There is relatively minimal inductive reasoning. It starts with a single observation or conclusion from extremely precise and similar circumstances (connectUs, 2016). This could not lead anybody in a varied world to a fair assessment and appropriate conclusion. Deductive thinking accumulates observations and then becomes particular and sometimes it goes awry. Inductive thinking begins with something specific and then attempts to generalize that goes wrong often (connectUs, 2016). Specifically - The IEQ study currently exists and is well known, for this. we know that our environment affects us in various ways. The reason for this study is to look at specific environment especially within our beginning stages of life. For we are unaware of how it affects us with those specific environments

Access to students:

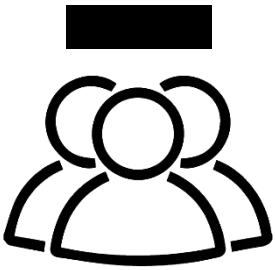
Big limitation is the access to the students needed to conduct the interview for the study is being conduct during the COVID-19 Pandemic which overall limits the accesses to the students. Participants might not agree to meet up to conduct the interview due to the safety issue of being around others. In order to get the best possible answers, one will need to analysis the individual's emotional response to the questions. Interview can be conduct over technology use such as skype and zoom calls but have the potential to be interrupted due to connection issues and blackouts. Therefor the information can be corrupted.

PART FOUR

FINDINGS AND INTERPRETATION

4.1 INTRODUCTION

Within this chapter the idea is to discuss and interpret the findings through the means of interviews. The data will be analysed and interpreted through a systematic approach by looking at each response to the questions within the interviews. This will be broken down into two groups. Group A and Group B.



Game Designers, Graphic Designers,	Interior Designers, Architectural
Group A: Consist of participants within 3rd or Honours degrees outside the architectural and interior design field.	Group B: Consist of participants within 3rd or Honours degrees that either study architecture or interior design

The participants that make up the study will only consist of individual within the higher educational institutions (3 participants in each group for a total of 6). All the finding within this research document will be supported/assisted through the means of relevant literature. For the information is important to the interior/architectural design field. The findings are a means to determine whether a student is aware of how the environment affect their well-being thought the key principles of IEQ (Indoor Environmental Quality).

4.2 UNDERSTANDING THE USERS EXPERIENCE/PERCEPTION

Research Question 1:

As a student that has succeeded through the higher educational institution. Would you say the learning environment was difficult or easy in terms of the lecturer-room situation? (Claustrophobic, to dark, to bright etc).

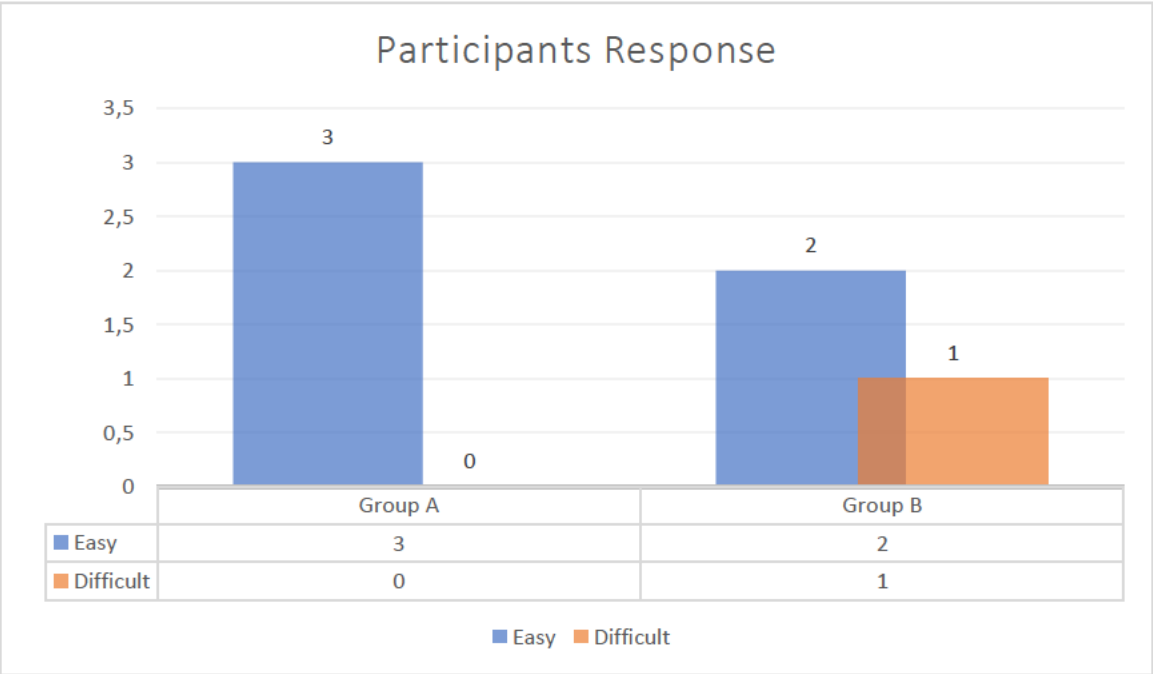


Figure 12. Participant response graph 1

Hypothesis and objectives:

The objective was to determine whether the learning environment was difficult.

It was hypothesized that majority of the participants responses would consist of the learning environment being difficult which was not the case.

Analysis of Findings:

Out of the 6 responses received, five participants perception on their environment within the lecturer room was deemed to be easy throughout their

years of studying when as one participant viewed their experience as being difficult. Even statistics from both Group A and Group B.

Interpretation of Findings:

These results give a basic understanding of how users experience and perceive their environment. To some the environment might be suitable enough to a point where they are able to function in a sustainable way. To others the process might not be as easy and might require functionality outside the premises of what the environment can provide them due to the system being structure for the general users and not specific users.

From this response a second question was implemented in order to gain a deeper understanding of their response to question one.

Research Question 2:

If you said in anyway “it was difficult or easy”. Can you elaborate why so?

Hypothesis and objectives:

The objective was to get the participant the evaluate their own surrounding the determine whether it had affected them and what was affecting them

It was hypothesized that majority of the participants responses would consist of the learning environment being difficult which was not the case.

Analysis of Findings:

In Group A. Participants 1 had a previous response of the environment being “Easy” but stated

“Well, Um, at the institution, it's very stark white lighten, so it feels sort of clinical, only some of the rooms. Um, other rooms also feel like there's effort being made to make it feel more forgiving”

Participant 2 and 3 in Group A had very similar and general response

“I would say it was sufficiently in regard to the lighting and everything and with the environment, it didn't feel like overly claustrophobic or anything”

In Group B. Participants 1 had a previous response of the environment being “Easy” but went on to state.

“So, I first studied and completed undergrad at a previous higher educational institution, that was three years ago, And I'd say in that facility, um, everything worked perfectly fine. We had secure parking. Um, we had separate buildings for the separate design students. So, we had our own building.

Interpretation of Findings:

Ortho the Responses were general, where some participant just related back to the question. Two participants went in depth regarding their response. The responses were more about the little elements within the environment that would be more pleasing to the everyday use of the space. Elements that stick out more to others. Such as the look and feel of the environment or how easy their previous higher education institution was compared to the one they are within.

4.3 DETERMINING WHETHER THE USER UNDERSTANDS

Research Question 3:

Are you aware of the term known as IEQ? (Indoor Environmental Quality).

Hypothesis and objectives:

The objective was to see if those who weren't in an interior/architectural design position knew about a key element that everyone within our society

It was hypothesized that majority all participant outside interior/architectural design fields wouldn't have an understanding into IEQ

Analysis of Findings:

The participants between both group responses were expected answers for the term IEQ or Indoor environmental Quality is a term mostly introduced within an environment where the use of well-being practice is implemented into the process. As shown in the below graph.

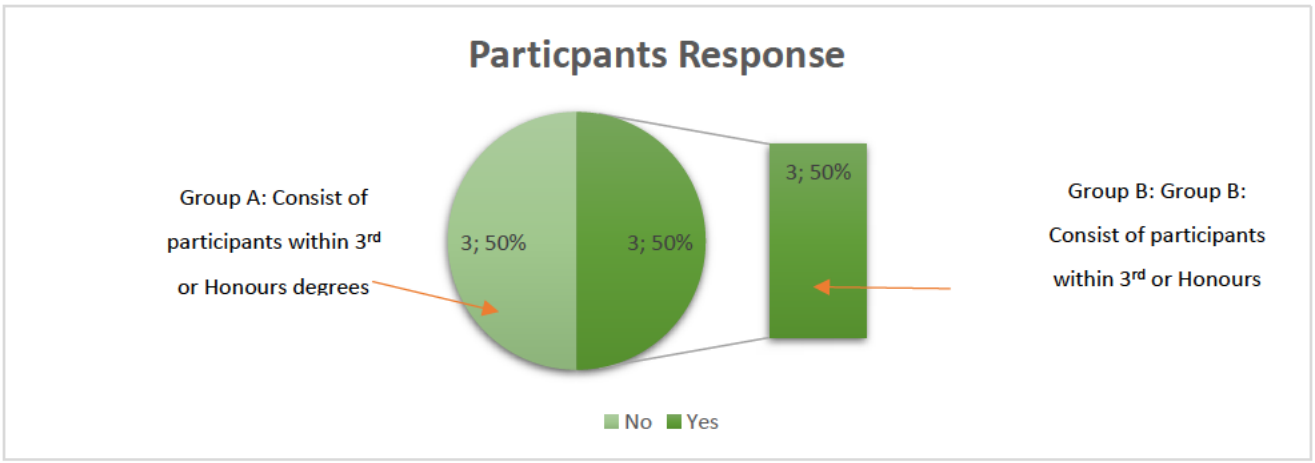


Figure 13. Pie chart (Participant's Response)

Interpretation of Findings:

The practice of implementing well-being through the means of IEQ is only implemented within the interior or architectural design field. This is very daunting due to the fact that we are unaware of the how our environment affects us as people. Not only on a physical but as well mental level. The practice of IEQ has a potential to enter the Game Design field, where the participants will be able to introduce more realistic elements within their productions of game titles.

Research Question 4:

Look at how your Lecturer rooms were designed. Would you say they include principles of IEQ or had some sort of thought process into IEQ? (Ergonomics, Sick building Syndrome, Inclusivity).

Hypothesis and objectives:

The objective was to determine whether the participant could evaluate their current learning environment and determine if it was suitable for them.

It was hypothesized that majority of the participants responses start to realize element that within the space that before the interview, would reveal themselves and make those who weren't aware, now aware.

Analysis of Findings

The general response was "Yes" our higher education's institution has provided some sort of process of including Indoor Environmental Quality.

"Okay, look, I've. I feel, I feel like it's relatively easy. I just don't like how it's sort of. Everything is mirrored, um, like splitting off in mirrored and it creates a lot of confusion about where the classes are and stuff like that. Um, and then also, I don't like the fact that I have to walk up three staircases to get to class. Yeah. But there is an elevator, but most of the time. Um, reserved for other people" (Participant 1, Group A).

Due to that fact the Group A consisted of student that work with technology to complete their courses and is a must within their degrees. One of the most common responses was the plug situation within the environment and that it doesn't follow a similar structure in all the lecturer room meaning that some student struggle with plug access and the type of plugs being used. Participant 3, Group 3 responded in a similar manner.

Interpretation of Findings

Although the general response was positive on the aspect that the environment does have some idea on the thought process of IEQ within the space. Small instances begin to arise the more the environment is used and overtime and become a common issue. Simple things such as access to plugs or who get to use what, makes a big difference on how we operate within our space.

4.4 UNDERSTANDING YOUR OPINION

Research Question 5:

Would you agree that each individual has their own unique way of working? which in time allows them to grow and develop.

Hypothesis and objectives:

The objective was made sure that uses know that designs need purposeful function and not just for looks. In doing so it can cater towards each person's needs

It was hypothesized that majority of the participants responses would consist of yes.

Analysis of Findings

The overall responses from Group A and B were "Yes" Due to the fact that not everyone is the same and each requires something unique or different in

order for one to feel happy within their environment. Everyone's well-being is as well determined by their personality traits.

Interpretation of Findings

"To consider the work of a person as a defining element of who he/she is, seems logical in many respects. It might be an indication of your beliefs, hobbies or background" (Kate Morgan, 2021).

From our begins, our environment has been a key element within our personal development and growth stage. Which has shape as individuals to the point we are now, because of this we become used to certain elements within our environment more than other. To some, they aren't aware of the how it affects them and has a potential negative affect towards their well-being. But from the findings it leaves us with one question. How do we cater for all?

Research Question 6:

Do you think the lecturer room environment, caters for each person abilities and disabilities?

Hypothesis and objectives:

The objective was to determine whether the uses are aware if the space is suitable or not for all uses whether they have abilities or disabilities

It was hypothesized that majority of the participants responses would be No the not all the rooms would suit all uses for majority of designs are not perfect and have so sort of flaws.

Analysis of Findings

"I'd say that. Yeah, they, they, uh, inclusivity is, as it is implemented. The campus would like, in an extent, uh, I don't even feel like it. I don't feel like there's like a, any problem with that" (Group B, Participant 2).

”I'm not a hundred percent sure about mental, um, disabilities, but physical disabilities. They definitely cater for as there are elevators and more than enough room within the classroom for someone with disability to navigate” (Group A, Participant 2)

The overall response from the participant was that the lecturer room environment “Does” Cater for each person’s abilities and disabilities.

Interpretation of Findings

The space is well suited for an individual with physical disadvantages for the environment has implemented process such as elevator and wide enough spaces for people with disabilities. In terms of navigating the overall space Group A, Participant 3 stated:

“Yeah, the classroom's names are a bit confusing, but also cool at the same time, but confusing, for you have to try and figure out where it is” (Group A, Participant 3).

Although the space is suitable the overall ways of navigating to your destination is difficult.

Research Question 7:

Regarding your above answer. What area within the lecturer room environment? Would you say has the biggest effect on the student ability to perform?

Hypothesis and objectives:

The objective was to determine whether the participants view of what affect them, is a common occurrence

It was hypothesized that majority of the participants responses be in relation to what they were studying and that their specific degree was not providing them the necessarily requirements

Analysis of Findings

“So I'd say it's probably technology that has the biggest impact on students' ability to perform. And would you say it's good with the new educational Institute or it's bad? Like is the implementation. I said, it's good. There's always plans around if one wall plug doesn't work. When you got a couple of other ones, you got projectors, you got free wifi” (Group B, Participant 1).

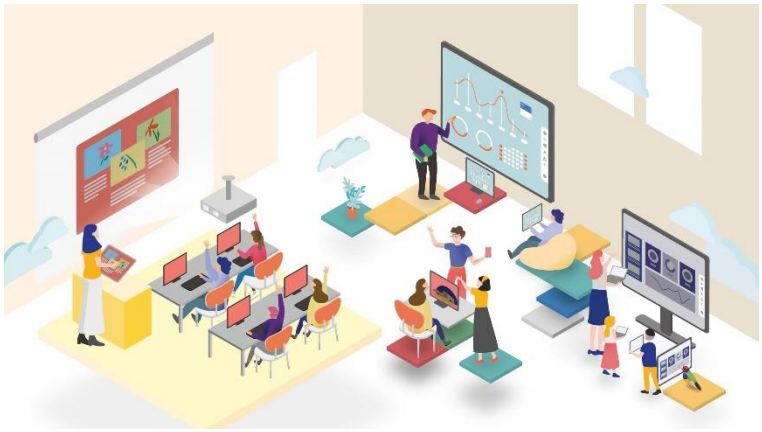


Figure 14. Technology in the classroom (ViewSonic, 2019)

The most common responses towards the above question were how space and technology are a great influence on how the participants perform within their environment and as well how easily accessible it is to them.

Interpretation of Findings

Group A responded:

“I wouldn't say there's one that stands out. The only one that I would say for students that don't have their own laptops, the computer rooms aren't, um, sufficient enough for people within our degree” (Participant 3).

“Um, some of our modules are more structured and for those. I prefer, um, rooms that are more structured because it gets me into that, um, a logic process. Um, but yeah, I think, I think, I think the biggest concern for me is,

is, is my personal space being. Invaded, I don't want to be cramped. And then at the same time, do I have enough space on my desk" (Participant 1).

Depending on what is it that you do will determine how to use the space or even how you would like the space to be. We manipulate our surroundings to suit our need and if we can't it normal has an impact on our well-being. That is why it is important for us to adapt and as well as the environment around us.

4.5 IMPLEMENTATION INTO THE DESIGN PROCESS

Question 8:

If you could be a part of the design process. Would you change anything in regard to the lecturer room environment and if so, what might it be?

Hypothesis and objectives:

The objective was to make uses aware and allow them to make future decision based on previous experiences and perception

It was hypothesized that majority of the participants responses would consist of yes. After all that was discussed.

Analysis of Findings

The Overall response to the question was "Yes" and that they would be a part of the design process. Group B, Participant 2 was not sure what they would change.

"You need to consider everybody. Um, and then, but just, just the small things. That's not going to bother anybody else that makes life easier for us" (Group A, Participant 1).

The general answers were to "Change the small things" that have a big impact to the user within their environments which in time can make the space easier to use.

Interpretation of Findings

In relation to the question. “It is vital that consumers be involved in the evaluation of your product/service, since you want to minimize any risk of usability, but also to ensure that before the launch, it has a good impact on your business goals” (Jinhee Declercq, 2016).

This overall means that if we included the users in the process there are less chance that problem will occur in the future. Our environment is meant to allow us to grow and develop and the only way we can do that is by including everyone in the process.

SUMMARY

The overall aim of the chapter was to analysis and interpret our finding during the research process and to determine it validity of the study therefor interviews better two group within a higher educational institution were selected to gain insight on whether they were aware of IEQ and how their environment affect them through the means of their experience/perceptions.

All participant within the research is currently within 3rd and Honour degrees in order to gain insight on their experience/perception thought-out their years of studying. Now if we look back to the questions that were needed to be asked in order to conduct the research, did we get the result we were looking for.

- How can the impact of sick building syndrome affect student productivity?

  Majority of the participants picked up on little details within their learning environment that can across as element catering toward the sick building syndrome issue and realized that it can be changes

- What areas within the student space, require more attention and why?
  the overall feed back was not necessarily about the space but more about the small features within the environment that made their live more difficult or had some sort of negative effect on their well being without realizing it until it was brought forth.

- In what way can we address the negative effect of sick building syndrome through the IEQ principles?

  Simple things as workspace ergonomic and space design would help the issues brought forth but overall it was mentioned that it was to late in their studies change the what has been done but know they can make changes in their future plans.

References

Amabile, Teresa M. 1983. The social psychology of creativity: A componential conceptualization. APA PsycNet [Online] Available at: https://psycnet.apa.org/record/1984-06764-001 Viewed on the 15 may 2021

ASHRAE, N.D. INDOOR AIR QUALITY QUIDE [Online] Available at: https://www.ashrae.org/technical-resources/bookstore/indoor-air-quality-guide Viewed on the 15 may 2021

Bassett, A. 2020 The Impact of Colour on the Well-Being. Shondaland [Online] Available at: https://www.shondaland.com/live/body/a33463636/the-impact-of-color-on-our-well-being/. Viewed on the 15 may 2021

Buchanan, A. 2016. What is wellbeing and can we design for it? Benefit Mindset [Online] Available at: https://medium.com/benefit-mindset/what-is-wellbeing-and-can-we-design-for-it-4bd69cd95142 Viewed on the 15 may 2021

Chapman, C. N.D. Cause and Effect – Exploring Color Psychology. Designers [Online] Available at: https://www.toptal.com/designers/ux/color-psychology Viewed on the 15 may 2021

Cherry, K. 2020. Color Psychology: Does It Affect How You Feel?. Verywellmind [Online] Available at: https://www.verywellmind.com/color-psychology-2795824 Viewed on the 15 may 2021

ConnectUS, 2016. 3 Advantages and Disadvantages of Inductive Reasoning [Online] Available at: https://connectusfund.org/3-advantages-and-disadvantages-of-inductive-reasoning. Accessed on the 15 August 2021

Crossley, J. 2012. Saunders' Research Onion: Explained Simply [Online] Available at: https://gradcoach.com/saunders-research-onion/ Viewed on the 15 August 2021

DataCollection, 2008. Data Collection and Analysis methods. BRM [Online] available at: https://research-methodology.net/research-methods/data-collection/. Accessed on the 15 August 2021

Davis & Cunha, 2021. Sick Building Syndrome (Environmental Illness, Multiple Chemical Sensitivity or MCS). MedicineNet [Online] Available at:

https://www.medicinenet.com/sick_building_syndrome/article.htm Viewed on the 15 may 2021

Design for Wellbeing, N.D. design for Wellbeing [Online] Available at: https://journeytowellbeing.switched.com.au/index.php/design-for-wellbeing/#1602107406871-b03c7431-6b15 Viewed on the 15 may 2021

EBD, 2008. Evidence-Based Design [Online] Available at: https://www.healthdesign.org/sites/default/files/Malkin_CH1.pdf Viewed on the 15 may 2021

Fighting Climate Change, N.D. Improving indoor air quality [Online] Available at: https://www.veolia.com/en/solution/improve-indoor-air-quality Viewed on the 15 may 2021

Garcia Bacete, JF et al. N.D. Effects of School on the Well-Being of Children and Adolescents. Springerlink [Online] Available at: https://link.springer.com/referenceworkentry/10.1007%2F978-90-481-9063-8_149 Viewed on the 15 may 2021

Gibbons, S. 2016. Design Thinking 10. NNgroup. [Online] Available at: https://www.nngroup.com/articles/design-thinking/ Viewed on the 15 may 2021

HCD Guest Author, 2008. Defining evidence-based design. Healthcare design [Online] Available at: https://healthcaredesignmagazine.com/architecture/defining-evidence-based-design/# Viewed on the 15 may 2021

Hammarberg, K et al, 2016. Qualitative research methods: when to use them and how to judge them. OXFORD [Online] Available at: https://academic.oup.com/humrep/article/31/3/498/2384737. Accessed on the 15 August 2021

IDEO, N.D. Design thinking is a process for creative problem solving. [Online] Available at: https://www.ideou.com/blogs/inspiration/what-is-design-thinking Viewed on the 15 may 2021

IDEO, 2018. IDEO's human centered design process: How to make things people love [Online] Available at: https://www.usertesting.com/blog/how-ideo-

uses-customer-insights-to-design-innovative-products-users-love Viewed on the 15 may 2021

Kinnarps, N.D. DIFFERENT COLOURS AFFECT US IN DIFFERENT WAYS [Online] Available at: https://www.kinnarps.com/knowledge/colours-have-an-impact/. Viewed on the 15 may 2021

Khindri, D. 2020. Design for People with a Human-Centered Design (HCD) Approach. Net solutions [Online] Available at: https://www.toptal.com/designers/ux/color-psychology Viewed on the 15 may 2021

Laerd, N.D. Total population sampling [Online] Available at: https://dissertation.laerd.com/total-population-sampling.php. Accessed on 15 August 2021.

Legg, JT. 2018. Sick Building Syndrome. Healthline [Online] Available at: https://www.healthline.com/health/sick-building-syndrome Viewed on the 15 may 2021

McCombes, S. 2021. How to create a research design. Scribbr [Online] Available at: https://www.scribbr.com/research-process/research-design/. Accessed on the 15 June 2021

MindTheInterior, N.D. WELLNESS FOCUSED INTERIOR DESIGN – designing interiors for health and well-being [Online] Available at: https://mindtheinterior.com/wellness-focused-interior-design-designing-interiors-for-health-and-well-being/ Viewed on the 15 may 2021

Muhammad, AM. 2018. Introductory Chapter: Indoor Environmental Quality. Intechopen [Online] Available at: https://www.intechopen.com/books/indoor-environmental-quality/introductory-chapter-indoor-environmental-quality Viewed on the 15 may 2021

NIOSH, 2013. INDOOR ENVIRONMENTAL QUALITY [Online] Available at: https://www.cdc.gov/niosh/topics/indoorenv/default.html#:~:text=Overview,air%20quality%2C%20and%20damp%20conditions. Viewed on the 15 may 2021

Nuralelawati, AB et al, 2012. Environmental Colour Impact upon Human Behaviour: A Review [Online] Available at: https://www.sciencedirect.com/science/article/pii/S1877042812003746 Viewed on the 15 may 2021

Nessler, D. 2016. How to apply a design thinking, HCD, UX or any creative process from scratch. DXD [Online] Available at: https://medium.com/digital-experience-design/how-to-apply-a-design-thinking-hcd-ux-or-any-creative-process-from-scratch-b8786efbf812 Viewed on the 15 may 2021

Physician, 2008. Data Analysis in Qualitative Research: A Brief Guide to Using Nvivo [Online] Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4267019/. Accessed on the 15 August 2021

QuestionPro, 2021. Conceptual Research: Definition, Framework, Example and Advantages [Online] Available at: https://www.questionpro.com/blog/conceptual-research/ Viewed on the 15 August2021

ResearchGate, 2021. INTEGRATING HUMAN-CENTERED DESIGN METHODS IN EARLY DESIGN STAGE: USING INTERACTIVE ARCHITECTURE AS A TOOL [Online] Available at: https://www.researchgate.net/publication/329036999_INTEGRATING_HUMANCENTERED_DESIGN_METHODS_IN_EARLY_DESIGN_STAGE_USING_INTERACTIVE_ARCHITECTURE_AS_A_TOOL Viewed on the 15 may 2021

ResearchGate, 2021. Perception of Colour Identity: A Literature Review of Urban Environmental Colour [Online] Available at: https://www.researchgate.net/publication/308526663_Perception_of_Colour_Identity_A_Literature_Review_of_Urban_Environmental_Colour Viewed on the 15 may 2021

Ritland, E. 2016. Advantages of Evidence-Based Design. INVISION [Online] Available at: https://www.invisionarch.com/insights/advantages-of-evidence-based-design/ Viewed on the 15 August 2021

RSA, 2020. What does it mean to be human-Centered [Online] Available at: https://www.thersa.org/comment/2020/06/what-does-it-mean-to-be-human-centred?gclid=Cj0KCQjw4cOEBhDMARIsAA3XDRgHyWO9W_9rXjszbS6papveG4Pdld7NBCaNf2gxGqOn9imc6ocJ7BwaAlgHEALw_wcB Viewed on the 15 may 2021

SFT. N.D. Indoor Environmental Quality [Online] Available at: https://sftool.gov/learn/about/1/indoor-environmental-quality-ieq Viewed on the 15 may 2021

SOCIALOGYGROUP, N.D. Advantages and Disadvantages of Interview in Research. [Online] Available at: https://www.sociologygroup.com/advantages-disadvantages-interview-research/. Accessed on the 15 August 2021

Thesismind, 2019. Analysis of Saunders Research Onion [Online]] Available at: https://thesismind.com/analysis-of-saunders-research-onion/ Viewed on the 15 may 2021

Voltage Control. 2020. 6 Phases of the Human-Centred Design Process [Online] Available at: https://voltagecontrol.com/blog/6-phases-of-the-human-centered-design-process/ Viewed on the 15 may 2021

WorldSustainable, 2020. Data collection tool and picking the right one [online] available at: https://worldsustainable.org/data-collection-tools/. Accessed on the 15 August 2021.

CONSENT FORM

Explanatory information sheet and consent form for participants
To whom it may concern, My name is Storm Hadley Arpin, and I am a student at Vega Pretoria. I am currently conducting research under the supervision of JD Eksteen about Exploring the students' experience/perception of IEQ at a private higher education institution. I hope that this research will enhance our understanding of how student performances are affected by the study environment they are within. Specifically private higher education institution. I would like to invite you to participate in my study. In order to explain to you what your participation in my study will involve, I have formulated questions that I will try to fully answer so that you can make an informed decision about whether or not to participate. If you have any additional questions that you feel are not addressed or explained in this information sheet, please do not hesitate to ask me for more information. Once you have read and understood all the information contained in this sheet and are willing to participate, please complete and sign the consent form below.
What will I be doing if I participate in your study?
I would like to invite you to participate in this research because (insert reason). If you decide to participate in this research, I would like to (explain exactly what participation will involve). You can decide whether or not to participate in this research. If you decide to participate, you can choose to withdraw at any time or to decide not to answer particular interview questions.
Are there any risks/ or discomforts involved in participating in this study?
Whether or not you decide to participate in this research, there will be no negative impact on you. There are no direct risks or benefits to you if you participate in this study. You might, however, indirectly find that it is helpful to talk about your (insert what you are examining). If you find at any stage that you are not comfortable with the line of questioning, you may withdraw or refrain from participating.
Do I have to participate in the study?
• Your inclusion in this study is completely voluntary; • If you do not wish to participate in this study, you have every right not to do so; • Even if you agree to participate in this study, you may withdraw at any time without having to provide an explanation for your decision.
Will my identity be protected?
I promise to protect your identity. I will not use your name in any research summaries to come out of this research and I will also make sure that any other details are disguised so that nobody will be able to identify you. I would like to ask your permission to record the interviews, but only my supervisor, I and possibly a professional transcriber (who will sign a confidentiality agreement) will

have access to these recordings. Nobody else, including anybody at Vega Pretoria, will have access to your interview information. I would like to use quotes when I discuss the findings of the research, but I will not use any recognisable information in these quotes that can be linked to you.

What will happen to the information that participants provide?

Once I have finished all interviews, I will write summaries to be included in my research report, which is a requirement to complete my BA Honours in Interior Design. You may ask me to send you a summary of the research if you are interested in the final outcome of the study.

What happens if I have more questions about the study?

Please feel free to contact me or my supervisor should you have any questions or concerns about this research, or if there is anything you need to know before you decide whether or not to participate.

You should not agree to participate unless you are completely comfortable with the procedures followed.

My contact details are as follows:
Storm Hadley Arpin
[redacted]

The contact details of my supervisor are as follows:
JD Eksteen
[redacted]

Participant or respondent consent

I, _____, agree to participate in the research conducted by Storm Hadley Arpin about Exploring the students' experience/perception of IEQ at a private higher education institution.

This research has been explained to me and I understand what participation in this research will involve. I understand that:

- I agree to be interviewed for this research.
- My confidentiality will be ensured. My name and personal details will be kept private.
- My participation in this research is voluntary and I have the right to withdraw from the research at any time. There will be no repercussions should I choose to withdraw from the research.
- I may choose not to answer any of the questions that are asked during the research interview.
- I may be quoted directly when the research is published, but my identity will be protected.

Signature	Date

THE INDEPENDENT INSTITUTE OF EDUCATION

CONSENT FORM FOR AUDIO OR VIDEO RECORDING

Consent form for participants
I, _____, agree to allow Storm Hadley Arpin to audio record my interviews as part of the research about Exploring the students' experience/perception of IEQ at a private higher education institution. This research has been explained to me and I understand what participation in this research will involve. I understand that: • My confidentiality will be ensured. My name and personal details will be kept private. • The recordings will be stored in a password-protected file on the researcher's computer; and • Only the researcher, the researcher's supervisor and possibly a transcriber (who will sign a confidentiality agreement) will have access to these recordings.

Signature	**Date**

Vega Ethics checklist: RESE8419/p/w

Student Details												
Title	Prof	☐	Dr	☐	Ms	☐	Mrs	☐	Mr	☒	Mx	☐
First name(s)	Storm Hadley											
Last name(s)	Arpin											
Title of study	RESE 8419											
Qualification	BA Honours in Interior Design											

Supervisor Details												
Title	Prof	☐	Dr	☒	Ms	☐	Mrs	☐	Mr	☐	Mx	☐
First and last names	JD Eksteen											
Co-supervisor Details (if applicable)												
Title	Prof	☐	Dr	☒	Ms	☐	Mrs	☐	Mr	☐	Mx	☐
First and last names	Armand Meyer											

Explaining your research process						
Philosophical paradigm	Positivism	☒	Interpretivism	☐	Constructivism	☐
	Realism	☐	Objectivism	☐	Pragmatism	☐
	Functionalist	☐	Subjectivism	☐	Humanist	☐
	Other:					
Research design:	Interview	☒	Questionnaire (self administered)	☒	Focus group	☐
	Ethnography/ Observation	☐	Artefact analysis/website/ social media analysis	☐	Action Research	☐
	Case Study	☒	Design Research (Practice based)	☐		☐
	Other *(if so, state)*	☐	Click or tap here to enter text.			
Brief explanation of the population and number of participants/items	3 – 3rd and Honours students. Preferably student with no insight to interior design in order to get opinions 3 – 3rd or Honours student with an understanding of IEQ and how they believe it affect students					
Target group sampling methods/artefact (No under 18's or vulnerable groups allowed)	Purposive	☒	Random	☐	Snowball	☐
	Convenient	☐	Stratified	☐	Census	...
	Explain selection process		3 – 3rd and Honours students. Preferably student with no insight to interior design in order to get opinions 3 – 3rd or Honours student with an understanding of IEQ and how they believe it affect students			

Ethics		
Documentation submitted with proposal	Gatekeeper's letter (institutional consent)	☐
	Completed Annexure E if you conduct research on IIE sites/students/staff	☒
	Instrument(s) (interview schedule or questionnaire)	☒
	Participant or respondent consent form	☒
	Audio-visual consent form (if applicable)	☒

Campus ethics committee recommendation

Proposal has been reviewed by the supervisor and necessary ethics considerations have been included.

☐ Accepted as is and provide letter

☐ Accepted with provisions: Nature of provision: e.g. Instrument is not sufficient / included and need to be signed off by the supervisor

☐ Major issues: Student should not continue with fieldwork. Actions to be taken: Click or tap here to enter text.

Supervisor signature	
	Click or tap to enter a date.
Co-supervisor/Campus ethics panel member signature	
	Click or tap to enter a date.

THE INDEPENDENT INSTITUTE OF EDUCATION

ANNEXURE E – RESEARCH REQUEST FORM (IIE007)

REQUEST TO CONDUCT RESEARCH ON OR ABOUT STUDENTS, STAFF, SITES OF ARTEFACTS OF THE INDEPENDENT INSTITUTE OF EDUCATION (THE IIE)

General instructions:

- This is a non-editable form; only ungreyed fields in the tables can be filled in. Some fields provide spaces for ticks, while others provide spaces for text to be entered or dates to be selected.
- Context-specific instructions appear in some sections.
- Only tick relevant boxes. All relevant dates must be selected by those and only those to which the date selection is relevant. Not all text fields will be relevant to all candidates. Where a text field is not, please mark it with an 'N/A' to indicate that the empty field was not overlooked.
- Text fields, though small in appearance, automatically expand as required by the text. Tables are also adjusted accordingly as a result.
- Headings and contextual delimitation appear in black text in the tables. The text you insert in the applicable fields in the tables will appear in blue. This cannot be changed.

Note for candidates who are not affiliated to The IIE as a student, staff member or contractor:
This form, and all other relevant documentation, should be completed and forwarded electronically to research@iie.ac.za and marked for the attention of the Dean: Research and Postgraduate Studies. Where applicable, you must provide the required accompanying documentation with this form, such as an ethics clearance certificate, a participant or respondent consent form and your measurement instrument.

Note for candidates affiliated to The IIE as a student, staff member or contractor:
Find out who the person responsible for managing research is at your campus. It is their job to send your completed research request form to the office of the Dean: Research and Postgraduate Studies. Where applicable, you must provide the required accompanying documentation with this form, such as an ethics clearance certificate, a participant or respondent consent form and your measurement instrument.

About the researcher												
Title	Prof	☐	Dr	☐	Ms	☐	Mrs	☐	Mr	☒	Mx	☐
First name(s)	Storm Hadley											
Last name	Arpin											
Student number *(if applicable)*	[redacted]											
SA ID number	[redacted]											
Passport number *(if applicable)*	Click or tap here to enter text.											
Home address							Postal address					
[redacted]							*Tick if same as home address*			☒		
							N/A					
[redacted]												

About the researcher's affiliations

Institutional affiliation *If research forms part of a qualification or institutionally sanctioned research project*												
Institution enrolled at	Vega Pretoria											
Qualification name	BA Honours in Interior Design											
Faculty or area of study	Arts & Design											
About the supervisor or promoter												
Title	Prof	☐	Dr	☒	Ms	☐	Mrs	☐	Mr	☐	Mx	☐
First and last names	JD Eksteen											
Email address	[redacted]											
Corporate or organisational affiliation *If the research forms part of a project sanctioned by a company or association or organisation*												
Employer	Vega											
Physical address	34 Ingersol rd, Menlyn, Pretoria.											
	Code	0081										
Contact number	012 343 3669											
Researcher's position or designation	Honours Student's											
About the head of the company, association or organisation												
Title	Prof	☐	Dr	☒	Ms	☐	Mrs	☐	Mr	☐	Mx	☐
First and last names	Ria Van Zyl											
Email address	[redacted]											
Researcher's position or designation	Head of research committee/ Honours coordinator											

About the research		
Purpose of the proposed research *Tick the appropriate option*	Undergraduate study	
	Postgraduate study	
	Private company or agency	
	IIE Celebrate Teaching and Learning	
	Other *(if other, explain below)*	
	Postgraduate Study	
Qualification or output type *For example, a Master's degree or a journal article*	Honours Degree	
Full title of the research	Exploring the students' experience/perception of IEQ at a private higher education institution.	
Value of the research	Allows us to understand how the private tertiary educational environment is affecting students in regards to their peformance, growth and developmen.	
Proposed date of completion	2021/06/17	
Proposed date of submission of research findings to The IIE	2021/09/13	

About the methodology *Indicate by ticking the appropriate block and answering the relevant sections.*					
Questionnaire	☒	*Interviews*	☒	*Observations*	☐
Existing	☐	Structured	☐	*Number of observations*	...
Own	☐	Semi-structured	☒	*Note what will be observed.*	

Open-ended	☒	*Number of interviews*	6	Click or tap here to enter text.	
Number of respondents	6	Focus group or workshop	☒		
Briefly identify, describe or explain the questionnaire. The idea is to determine whether the students are aware of IEQ and how it might be affecting the performance		*Participants per focus group*	3		
		Number of focus groups	2		
		Briefly expand on the interview, workshop or focus group questions. Interior Senior Hons students			
Purposive	☒	Random	☐	Snowball	☐
Convenient	☐	Stratified	☐	Census	☐
Other *(if so, state)*		N/A			
Other methods *If so, state the method and expand on how it will be used*		N/A			
List of the student or staff groups, sites or artefacts under study		3, 3rd and Honours Student that are not studying interior design within the IIE Setting. 3, 3rd or Honours Student that are aware of IEQ and can voice their opinion on the affects within the IIE Setting.			
Average time participants or respondents will be involved in research activities		20 - 30 min per student			

About the ethics considerations for the research						
Aspects considered	Informed consent	☒	Anonymity	☒	Confidentiality	☒
	Committed to give feedback on the study	☒	Voluntary participation	☒	Vulnerable group involved	☐
	Elaborate on vulnerable groups		Click or tap here to enter text.			
Documentation submitted with proposal* *Select the applicable options*	Ethics clearance certificate or letter					☒
	Instrument(s) (interview schedule or questionnaire)					☒
	Participant or respondent consent form that includes information sheet for participants or respondents					☒
	Audio-visual consent form (if applicable)					☒

Conditions for conducting research on or about students, staff, sites or artefacts of The Independent Institute of Education

1. A copy of the final paper must be submitted electronically to The IIE's Dean for Research and Postgraduate Studies at research@iie.ac.za no later than 30 days post finalisation.
2. The researcher(s) is not permitted to either refer to The IIE or any of its educational brands or to the name, logo, brand or any other identifiers of The IIE or any of its educational brands in any way, including, but not limited to, in questionnaires, surveys, interviews, proposal or research reports. The IIE or educational brand in question must be referred to in a generic manner, for example, 'A private provider'.
3. The researcher(s) will need to obtain informed consent in writing from all of the participants in his/ her sample if the study is not anonymous.
4. If the Learning Management System (LMS) of The IIE is used, the researcher(s) is not permitted to refer to it by name. Learn needs to be referred to in a generic manner, for example "the Learning Management System of a Higher Education provider."

5.	A copy of this letter must be forwarded to the relevant person(s) at the brand or The IIE that would be involved in the study.
6.	Research must be conducted in such a way that the normal programme and operations of the site/ offices is not interrupted.
7.	The principal/ manager of a site must be consulted about an appropriate time when the researcher(s) may carry out the research at the site.
8.	The researcher(s) may only use this data for these research purposes and in no other way.
9.	Should the researcher(s) wish to publish this research or in any way make the results public, for example by publishing the results on a social media platform, this committee will need to approve a request to this end first.
10.	No names or identifying information of participants may be used within the research and the research must be voluntary.
11.	Photographs of human subjects may only be taken if relevant to the research and informed consent from the participants or respondents was obtained, and, even with informed consent, the photographs may not be published.
12.	The researcher is responsible for supplying and utilising his/ her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions or the offices visited for supplying such resources.
13.	If any of The IIE reports or policies are used as part of the research, all identifying information needs to be removed.
14.	Please make it clear that the information will not be used punitively in any way and participants may in no way be counselled or advised based on this.
15.	The reference number of the permission letter, if permission is granted, must appear, in one format or another, on all research documentation distributed amongst IIE staff or students.

Declaration by the researcher	
1. I declare that all statements made by myself in this application are true and accurate; and 2. I accept the conditions associated with the granting of approval to conduct research and undertake to abide by them.	
[redacted]	2021/06/17
Signature of the researcher	Date

Declaration by the supervisor/promoter/lecturer	
I declare that	
1. the above researcher is enrolled at the institution/ employed by the organisation to which the undersigned is attached; 2. and that the research proposal and or study has been approved by the Ethics Committee of The Independent Institute of Education; and 3. and that the questionnaires/structured interviews/tests meet the criteria of: • Educational accountability; • Proper research design; • Sensitivity towards participants; • Correct content and terminology; • Acceptable grammar; and • Absence of non-essential/superfluous items.	
X _____	Click or tap to enter a date.
Signature of the supervisor/promoter/lecturer	Date

THE INDEPENDENT INSTITUTE OF EDUCATION

An interview will be conducted In order to fulfil the needs to complete BA honours in Interior Design RESE 8419. Do you: Name _____ agree to be a participant in the following research assignment. All knowledge of the participant will be anonymous in order to protect the rights of the individual. Information that is provided will be done in a truthful and ethical manner and will not inflect harm on the researcher or the participant

1	As a student that has succeeded through the primary educational sector. Would you say the learning environment was difficult or easy in terms of the classroom situation? (Claustrophobic, to dark, to bright etc.)
2	If you said it was Difficult or Easy. Can you elaborate why so?
3	Are you aware of the term known as IEQ? (Indoor Environmental Quality)
4	Look at how your school lecturer-rooms were designed. Would you say they include principles of IEQ or had some sort of thought process into IEQ? (Ergonomics, Sick building Syndrome, Inclusivity).
5	Would you agree that each individual have their own unique way of working? which in time allows them to grow and develop.
6	Do you think the classroom environment caters for each person abilities and disability?
7	In regard to you answer above, what areas within the classroom environment would you say have the biggest effect on the student's ability to perform?
8	If you could be a part of the design process. Would you change anything in regard to the classroom environment and if so which might it be?

“By completing this questionnaire, you agree to be interviewed for this research. You understand that your confidentiality will be ensured and that you name and personal details will be kept private. You understand that your participation in this research is voluntary and that you have the right to withdraw from the research at any time. You may choose not to answer any of the questions that are asked during the research”.

Participants Signature: _____

Researchers Signature: _____

THE INDEPENDENT INSTITUTE OF EDUCATION

ce: R. 15556
Enquiries: [redacted]

Permissio
ondit

Initials and surname:	SH Arpin
Student number:	[redacted]
Institution:	IIE Vega
Qualification/output:	Honours
Research to be conducted in:	Exploring the students' experience/perceptions of IEQ at a private higher education institution
Title of study/paper:	Same as above

Dear Storm Arpin,

The committee considered your request and have granted permission to conduct research on IIE staff, students, sites or artefacts in accordance with your request – on condition that you strictly adhere to the conditions stipulated below. This approval is based on the assumptions that (1) the information you have provided is true and factually correct and that (2) the study will be conducted in an ethical manner.

Permission is granted to proceed with the above study subject to meeting the conditions listed below. Permission may be withdrawn should any of these conditions not be met.

Please note: The panel has not considered the merits, accuracy or ethical soundness of the research. The only merits examined are the use of The IIE as a sample.

Conditions to be met	
1.	A copy of the final paper must be submitted electronically to The IIE's Dean for Research and Postgraduate Studies at research@iie.ac.za no later than 30 days post finalisation.
2.	The researcher(s) is neither permitted to refer to The IIE or any of its educational brands nor to name, logo, brand or any other identifiers of The IIE or any of its educational brands the in any way, including, but not limited to, in questionnaires, surveys, interviews, proposal or research reports. The IIE or educational brand in question must be referred to in a generic manner, for example 'A private provider'.
3.	The researcher(s) will need to obtain informed consent in writing from all of the participants in his/ her sample if the study is not anonymous.
4.	If the Learning Management System (LMS) of The IIE is used, the researcher(s) is not permitted to refer to it by name. Learn needs to be referred to in a generic manner, for example "the Learning Management System of a Higher Education provider."
5.	A copy of this letter must be forwarded to the relevant person(s) at the brand or The IIE that would be involved in the study.
6.	Research must be conducted in such a way that the normal programme and operations of the site/ offices is not interrupted.

7.	The principal/ manager of a site must be consulted about an appropriate time when the researcher(s) may carry out the research at the site.
8.	The researcher(s) may only use this data for these research purposes and in no other way.
9.	Should the researcher(s) wish to publish this research or in any way make the results public, for example by publishing the results on a social media platform, this committee will need to approve a request to this end first.
10.	No names or identifying information of participants may be used within the research and the research must be voluntary.
11.	Photographs of human subjects may only be taken if relevant to the research and informed consent from the participants or respondents was obtained, and, even with informed consent, the photographs may not be published.
12.	The researcher is responsible for supplying and utilising his/ her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions or the offices visited for supplying such resources.
13.	If any of The IIE reports or policies are used as part of the research, all identifying information needs to be removed.
14.	Please make it clear that the information will not be used punitively in any way and participants may in no way be counselled or advised based on this.
15.	The reference number for this letter must appear, in one format or another, on all research documentation distributed amongst IIE staff or students.

All the best with your research.

Yours sincerely,

Dr WH Engelbrecht
Dean: Research and Postgraduate Studies
The Independent Institute of Education

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