

# Building Mental Resilience through Online Interactive Learning for Students in Higher Education

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**Abstract**—The global pandemic of COVID-19 has brought significant changes to the academic life of higher education students. Many of them face stressful and challenging situations, which calls for the need of resilience. The awareness, identification and practice of resilience traits are beneficial for students and this learning aspect is often not being taught within the university courses. The objectives of this paper are: 1) To review resilience models and identify resilient traits from the models, 2) To propose a study of online resilience building for higher education students using interactive tools and online modules. Three different models were reviewed to help building academic resilience. Some key traits of resilience are identified from the models, and to be included in the online interactive learning and modules in “Resilience Building” Knowledge Programme for higher educations.

**Keywords**- *Interactive learning; online module; resilience building; interactive tool.*

## I. INTRODUCTION

In the digital era where cybercultures took over the world, their related technologies became a part of our daily life. Devices and gadgets are becoming more and more accessible with the development of technologies. Students in higher education institutions are exposed to information overload, fake news, and infodemic perspective, which has the effect of diverting their attention away from their studies. As this happens, industries, such as medical, education, and manufacturing each have multimedia tools developed for different purposes and to meet different needs. One of them was the need to improve mental well-being or wellness of the talents in these industries.

Since the COVID-19 pandemic outbreak, countless students worldwide were led into a new mode of study. Instead of physical and face-to-face classes, hybrid and online modes of study have emerged as new mainstream modes of study. This brings the students into a distressing situation, which calls for inner mental strength to adapt to this ever-changing world, and resilience became a valuable quality for students to succeed in a challenging situation. Alongside the adaptive strategies in maintaining normal work and school life in midst of the pandemic, industries and tools that provide online learning platforms, such as Zoom and Google Workspace also flourished. This opens an opportunity for educators to convey their message and teaching resources in a

more accessible way, which would benefit learners and future talents regardless of their locations. Previous Resilience Building Programme were mostly in-house and face-to-face within an institution. With online and interactive technologies as an enabler, this study explores open concepts of Resilience Building Programme for wider access to students in higher learning institutions.

Section II introduces the background of the proposed study, the challenges faced by higher education students in the post pandemic era, and the key concepts of the study are highlighted. Section III starts to address the first objective of the paper by briefly reviewed the three resilience related models, which can contribute to a robust guide of resilience modules, and finally Section IV addresses the second research objective by proposing a study on Resilience Building Programme to be recommended for higher education students. The last section concludes the paper.

## II. RESEARCH BACKGROUND AND CONCEPTS

### A. *Online and Interactive Learning*

Online learning is an educational concept that was brought up over two decades ago. It can be defined as an alternative way of study, mainly at the tertiary education level, and is often referred to as e-learning as well. It is also an umbrella term for learning process that took place across distance instead of in traditional classrooms [1].

Interactive learning is a type of learning that required and encouraged student participation and engagement during the teaching process. Instead of lectures, students are encouraged to explore and learn through interactive learning environment with the presence of instructors, peers and materials. It can be a problem or project-based learning and sometimes requires discussion and sharing. This type of learning method also incorporated multimedia tools such as, videos, websites, games, and applications to bring the learning process into another dimension and increase engagement. This environment is open, virtual, regardless of geographical location, and time.

During the COVID-19 outbreak, universities and schools are required to adhere to the government’s constrain on order and policy. Through the phase of quarantines, both modes of learning were used more often than ever. Students were required to adapt and have classes, tests, quizzes, and submit assignments online. In a situation where social contact is

discouraged, interactive learning was the main tool that students rely on for their learning and developments. The concept of a virtual classroom was widely known among students and the practice incubates tools and applications that aid such a learning mode. The changes were revolutionary as the mentioned mode of learning has been more accessible than ever. Video conferencing and interactive tools such as, Zoom, Kahoot, and Google Classroom have become a crucial part of a student’s study life. Utilizing such tools also provided convenience to the process of training and learning and made the processes more convenient for some, as traveling or commuting is not required. It is also a mode of study that ease social anxiety as students felt more secure and would be more willing to share and interact with instructors [2].

**B. Students’ distress and related issues**

Among the common stressors of a student are academic responsibilities or pressures, finances, anxiety, poor work/school-life balance, and family issues. On top of the already stressful tertiary education, students learning during the pandemic was also isolated and faced the fear of contracting the COVID-19 virus. The fear of going unemployed after graduation also rose as work situations also revolved in a different mode during the pandemic. The spreading of fake news is another fear that cannot be taken for granted. The Malaysian Communications and Multimedia Commission's (MCMC) findings on the propagation of fake news about coronavirus mortality is concerning in our culture [3]. This is because irresponsible people's attitudes provoke panic and concern in those who lack reputable sources of viral knowledge and are readily duped. They disseminated the fake news via various social media platforms such as, WhatsApp groups, family, community, and so on. A reasonable person should be able to verify their legitimacy by visiting more accurate websites, such as, the Ministry of Health Malaysia's website, MySejahtera or their social media channels. Amidst all the stress and fears, one might face psychological issues such as, anxiety, depression, and even develop eating disorders. This leaves a negative impact on students’ academic performance and further discourages them from achieving their potential [4].

**State of Adolescents’ Mental Health in Malaysia**

(Based on DAASS-21 scoring)

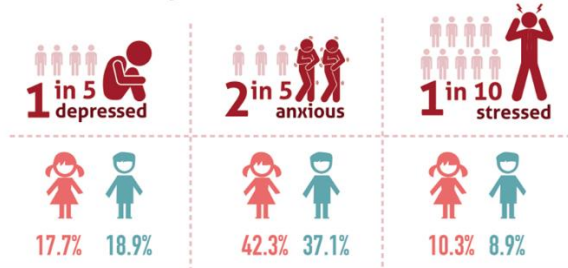


Figure 1. Statistics show the mental health conditions of adolescents in Malaysia [5].

The statistic in Figure 1 shows that Malaysian adolescents aged 13-17 experienced depression, anxiety, and stress. Among them, anxiety was the most significant issue as 2 out of 5 faced it with 42.3% of females and 37.1% of males.

**C. Mental Well-being and Resilience in Academic Settings**

Resilience can be defined as the capacity to recover or bounce back from difficulties and challenging situation. The American Psychological Association once defines resilience as “the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress.” [6] In the situation of trauma and stress, such as financial problems, death of a loved one, due dates and failure, calls for this quality to strengthen one’s inner strength and determine their strategy to overcome hardships. In a student’s reality, resilience can differ in multiple degrees across their domains of life as they play their role as students, children, or employees. Developing resilience would help said students maintain a healthy, stable, and functional mental state after an adverse event or amidst challenges of academic life. Students could greatly benefit from having a tailored program to foster resilience or mental strength within them as an aid to support their identified challenges.

On the other hand, mental well-being is a term often associated with resilience. Being in a state of good mental well-being keeps students thriving in various areas of life, such as, interpersonal relationships, academic performance, and work. Being in a mentally well state is in fact not equivalent to the absence of mental illness or adversity but acknowledging and believing the said problems can be handled and healed. This resonates with the concept of resilience and hence resilience is one of the qualities that ones can enhance their mental well-being.

The qualities of well-being and resilience are vital for students to face their academic challenges and stress. By acquiring them, students can have the chance to display their potential in academic settings. This helps them to gain control of their life and to build soft skills, which would, in turn, help them adapt to the work environment after graduation. These qualities are believed to be a learnable skill or trait to help them flourish despite facing tumultuous situations.

**D. Interactive learning**

Interactive learning is a type of learning method that encourages learning exchange and independent study with the aid of interactive tools and means such as, the Internet, website, games, and applications. It requires hands-on activity or approaches for the students to build engagement and learn a certain topic. It can be conducted through guided activities or interactions with various tools [7].

**E. Online Modules**

The term module is often used to describe unit or lessons. It breaks down knowledge into digestible, smaller pieces with a clear progressive path to build understanding on a field or skill. Online course or modules can be defined as a web-based learning experience in which students are able to access to teaching materials via online or multimedia tools such as, audio or video [8]. Online modules are designed for students with academically sound content that is devoid of incorrect information or fake news.

F. Interactive tools

An interactive tool is a method to induce engagement within a targeted audience or user by providing them with functions within webpage, application, or other multimedia tool that users can interact at their own pace. It can also contain information, have different functionalities or assessment, and with an educational purpose. It is also widely used in fields that require huge amount of skill training and simulations [9].

III. RESILIENCE BUILDING MODELS FOR STUDENTS’ WELL-BEING

A. The Need of Building Resilience for Students

Students faced different stressors on academic aspects, which included due dates, assignment workload, and peer pressure. To face these stressors, students can benefit themselves by building resilience. However, resilience building is not officially taught in many university course modules. To have academic resilience as a student means to face challenges with a never giving up attitude, able to bounce back from a failed attempt, and eventually drive themselves towards success. This also allows students to have capacity to perform better even in a disadvantaged background. This helps students to be a high achiever in academic background.

Resilience building is a crucial part of training for students. They should be exposed to various resilience models. Three resilience models are reviewed as follows:

B. The 5-Part Model of Resilience

The 5-part model of resilience would be the theoretical foundation of research and training for students (refer to Figure 2). It consists of five components that “represent the interaction of an individual’s environment, thoughts, feelings, behaviors, and physical reactions” [10], which was also the pillar of building resilience.

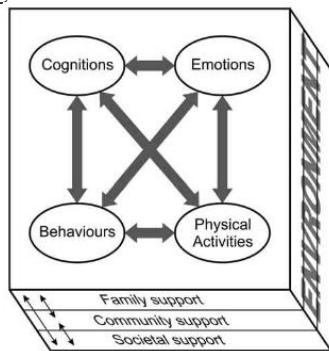


Figure 2. The extended five-part model of resilience [10]

These pillars were used to understand the past experience of individuals in cognitive behavioral therapy, especially those who suffered in distress or adverse events. Through this, resilience is investigated as a multidimensional concept that was built up from personal, social, and physical resources. The concept of this resilience model was first brought up in the 1999 by Kumpfer and included some internal and external aspects. This 5-part model was an updated one that recognized

the key part in internal and external aspects while broaden the environmental factors such as, family, community and societal support on top of the five identified pillars of resilience.

This model would be a guide to students’ internal aspects, which were cognitions, emotions, behaviors, and physical activities as well as their external factor, the environment. Cognitive aspect was how individuals interpret the situation they faced and their outlook on it. Emotion describes the feelings and thinking style, which have an impact on individual’s mood and thoughts. Behavior describes the reaction and action individuals take and utilize in different situations. This is not to be confused with physical activities, which was the physical sensation that individuals experience. It could be non-autonomous such as, anxiety, nausea and shortness of breath though it can be controlled by consciously managing it through rest and relaxation. Through understanding these aspects and how they worked, resilience and what foster it can be understood to help those students who wish to acquire resilience as their own trait [10].

C. The 5R model

The 5R model is a framework proposed by Global Health Connect (GHC) [12] which is formulated based on the psychosocial foundations that can enhance well-being and productivity at workplaces. This model creates mental health awareness based on Resilience, Relationship, Roles, Respect and Resolution. It is believed that this mental health 5R model will be useful for students as well to improve their resilience, focus, relationship with others and well-being. This model is applied in the GHC’s psychosocial interactive mobile application for workforces, named as Empathic.

It encompasses 5 aspects, which the first aspect is resilience, as it is critical to overcoming stressful situations in any type of work environment. The relationship is a factor that provided psychological safety and assure success and achievements. Roles can provide clarity to goals and ensure an undisturbed workflow and keeps the working process efficient. It also improves the sense of satisfaction as individuals contribute to their own roles. This model also included resolution which is a sense of purpose and meaning that drives people forward. The final aspect of this model is respect that aimed to reduce interpersonal conflicts, especially when mingling in a diverse culture [12].

Introducing students to this model would be an aid for the students to observe their current situations from different dimensions and viewpoints thus making their decision based on better judgement.

D. The PERMA model

This model was introduced by Martin Seligman [13] as an evidence-based approach to achieving a happy state and decreasing the likeliness of anxiety, depression, and stress. This model included many activities to systematically improve individual’s positive emotions (P), engagement (E), relationships (R), meaning (M), and achievement (A), which fits in the PERMA abbreviation.

This model pursues the concept of happiness and well-being through said five aspects. It describes the significance

of optimism in life, relationships, and situations. It also introduced the flow state where one is fully involved and enjoying what they do while getting rewarded with efforts made. This model also states the sense of belonging is a key to well-being and isolation and loneliness in a relationship often do harm to one's mental well-being. Living a meaningful life with a sense of accomplishment also contributes to a state of happiness as well [14].

The concept of happiness and positive psychology would bring students to the attention of the importance of consciously managing and reaching for their happiness through positive thoughts and choices.

### E. Instilling Traits of Resilience for Students

To possess the traits of resilience with improved mental well-being, students should acquire a few traits of resilience based on the three reviewed models. According to the 5-part model of resilience, students should have a positive view to themselves in terms of their ability and potential. They should also have stable emotion and consciously manage their thinking and behavior in a healthy and positive way. This also resonates with the concept of PERMA, which encourages the students to find and manage happiness in what they do. These two models will help in training students to have a positive attitude when facing challenges, bounce back from failure, and build up confidence gradually. This practice encourages students to face challenges and stress with a changed attitude and hopefully found success of their own way. The 5-R model provides a dimension for students to recognize the importance of being resilient for them in academic life with continuous assignments or projects to be accomplished. Students' apprenticeship and work-life balance should consider the tenets of 5Rs, to be more comprehensive for building their resilience. Furthermore, students can also consider to get help or support from others when trauma and stressors are overwhelming. A resilient student will be able to use all the internal and external strength they have with intention to succeed in what they do. This would mean that they are determined to achieve goals even when facing setbacks and failure. This will also help them cope with negative situations and emotions. They need to manage their strong emotions and consciously stay in a healthy thinking style that encourage them to never give up.

An online course was conducted to participants consisted of university students from the UK. Each was given rating of happiness each week where, on average, happiness ratings significantly increased throughout the course [15] (refer to Figure 3). The study found that the first-year university students took the same online course during their first term experienced positive benefits to mental well-being in comparison to the control group who were the wait-list group. Hence online based training can be a promising external

support for students to improve their mental well-being and resilience.

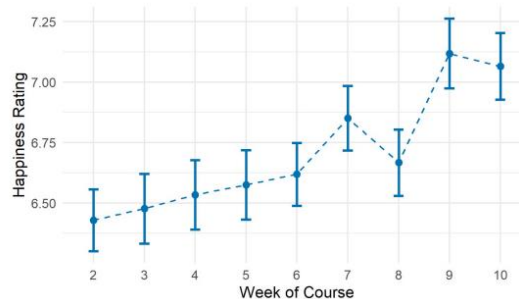


Figure 3. Statistics shows the rating of students' happiness increase over the course of 10 weeks

By using an online approach, students can feel secure by keeping their identity a secret when they share experience and receive help. The location will also not put as a constraint for students to get help.

### IV. RESILIENCE BUILDING KNOWLEDGE PROGRAMME FOR STUDENTS IN HIGHER EDUCATION: A PROPOSED STUDY

This section is to address the second objective of this paper. A study is proposed with the aim to examine whether an online interactive module of resilience is able to improve final year students' awareness of resilience, its traits and the coping strategies in their attempt to achieve academic performance.

For undergraduate students, their final year was the most crucial year for them to build employable skills as they will eventually graduate and join the workforce. This is also the year that students will face most of their academic challenges and would greatly benefit from Resilience Building Programme. Hence this research will also review some resilience models currently available, which would aid the students in pursuing their academic success.

This would help them to thrive in their higher education studies and achieve academic goals. With the awareness of maintaining and managing their mental well-being for a more resilient self, students can be guided to acquire the quality of resilience to navigate themselves to success. This would be done by focus group discussion with the targeted students.

The students will be requested to fill two instruments regarding their mental well-being and resilience. The instruments involved are the Kessler Psychological Distress Scale (K10) and The Utrecht Work Engagement Scale for Students (UWES-9S), which carries ten and nine items respectively to collect quantitative data for this research. K10 provided a brief screen and aided in identifying the level of distress among the selected students. This scale is highly reliable despite its simplicity [16]. The Utrecht Work Engagement Scale for Students (UWES-9S) measures the levels of energy and mental resilience in the process of working. It also investigates the sense of significance, inspiration, pride, attitude towards challenges, and concentration in work [17]. They will then be guided through an interactive module online based on the three models stated

before to help build their resilience. The K10 and UWES-9S instruments will be filled before and after the module as comparison. Data collected will be computed and analyze for group comparison. Interactive tools such as Google Meet, Empathic application and website will be used in this module. The contents of the module will consist of and backed by the three models, the 5R, PERMA, and the 5-part resilience model in order for them to acquire the traits in these models. Data collected will be used to design a resilient building application aimed to build resilience among higher education students. This study will take approximately a year.

The significance of the study is that when resilient building for students can be done easily in terms of location and cost, it can be accessible for many students, and they are able to get a fair chance to be successful in academic life. Students' dropout rate and complications caused by academic stress can be reduced simultaneously.

## V. CONCLUSIONS

This paper highlighted some key concepts of research to be proposed and carried out in a study. The goal of research is to improve awareness and possibly to build resilience and well-being of students in higher education. The study will utilize online learning, interactive tools, video conferencing tools and online modules for reaching to a wider group of students.

Resilience building for younger generation is urgent and important, especially those who are studying in the technical domains and vulnerable of information loading with low Internet literacy level. Soft skills on resilience awareness and learning should be widely introduced to benefit more young learners. Moreover, the skills may assist them in remaining attentive of any material loaded on the internet elsewhere. They are supposed to choose and filter the suitable information that is loaded to them.

Online learning, Resilience Building module, interactive learning and engagement should be the next agenda of higher education, so that the graduates produced are resilience in facing greater challenges in their life and works.

## ACKNOWLEDGMENT

This research is supported by the Malaysia Ministry of Higher Education's Fundamental Research Grant Scheme (FRGS) [FRGS/1/2020/SS0/MMU/02/8].

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