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Aim and Scope

The International Journal of Creative Multimedia (IJCM) is a peer-reviewed open-access journal devoted to publish research papers in all fields of creative multimedia, including Digital Learning, Film & Animation, Media, Arts & Technology and Visual Design & Communication. It aims to provide an international forum for the exchange of ideas and findings from researchers across different cultures, and encourages research on the impact of social, cultural and technological factors on creative multimedia theory and practice. It also seeks to promote the transfer of knowledge between professionals in academia and industry by emphasising research where results are of interest or applicable to creative multimedia practices. We welcome all kinds of papers that connect academic researches with practical and industrial context in the field of creative multimedia. The scope of the IJCM is in the broad areas of Creative Multimedia following the five major thematic streams, includes but not limited to:

- Digital Learning
- Media, Arts & Technology
- Games and Virtual Reality
- Cinema and Film Studies
- Animation and Visual Effects
- Visual Design and Communication

Foreword from Digital Learning Editorial Team

Greetings from the Editors and welcome to the Special Issue on Digital Learning in the 21st century. In this Issue, we present papers from international and local researchers focusing on research papers in areas of education technology, learning analytics, e-learning, engineering, IT, business and management, creative multimedia and many other domains that seek to improve the learning process of the learner with technologies. These papers were presented in the ELITE 2019 International Conference held in Multimedia University, Cyberjaya, Malaysia on October 2, 2019, in conjunction with the 2019 IDE4TE International Exhibition on Oct 1, 2019. Themed, “Empowering Learning, Innovating Teaching Environments”, this event showcased best practices of Malaysian Universities, particularly from the network of Industry Driven Education Alliance (GLU iDE4) comprising of Universiti Teknologi Petronas (UTP), Universiti Multimedia (MMU), Universiti Tenaga Nasional (UNITEN) and Universiti Kuala Lumpur (UniKL), as well as from international presenters from China, India, Bangladesh and Maldives.

The papers presented in this Special Issue centred around 5 sub-themes; 1) Innovative Pedagogies & Instructional Design, 2) New Roles of Teachers, 3) Redesigning Curriculum for Education 4.0, 4) Emerging Technologies In The Classroom, and 5) Designing Learning Spaces for 21st Century Education, and are very timely articles for readers interested in adapting technology in today’s classrooms. We hope that these papers will provide further insight and contributions to the knowledge base in these fields and we hope you enjoy reading them.

Prof. Ts. Dr. Neo Mai, Multimedia University, Malaysia

Professor Dr. Neo Mai is the Director for Academic Development for Excellence in Programmes and Teaching (ADEPT) for Multimedia University, and Professor in the Faculty of Creative Multimedia, and the Institute for Digital Education and Learning (IDEAL). Prof. Mai is the Director of the award-winning MILE Research lab and founding Chairperson form the CAMELOT (Centre for Adaptive Multimedia, Education and Learning cOntent Technologies) Research Centre. Prof. Mai's research interests are in the design of constructivist learning environments, micro-learning, team-based learning and web-based education. She was the recipient of the 2014 Excellent Researcher Award, an AKEPT Certified Trainer for Interactive Lectures (Level 1, 2, 3), an HRDF certified trainer and is certified in Team-Based Learning from the Team-Based Learning Collaborative, USA.

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Dr. Gan Chin Lay is a Senior Lecturer affiliated with the Faculty of Business, Multimedia University. Her main research interest is in learning analytics, particularly related to technology-enhanced student-centered learning environments. Her research domains include teaching and learning issues such as student engagement, and educational technology integration frameworks.

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Dr. Liew Tze Wei is a Senior Lecturer at the Faculty of Business, Multimedia University, Malaysia. He is leading the Human-Centric Technology Interaction Special Interest Group, in addition to serving as the collaboration & innovation coordinator and research & innovation committee member in the faculty. His research interests and contributions fall within learning sciences, human-computer interaction, and media psychology; with a strong focus on experimental research approach.

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Educating Gen-Z: Developing a Teaching and Learning Ecosystem in a 21st Century Learning

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Abstract

Fostering a teaching and learning ecosystem is vital in the 21st century teaching and learning process to determine student's positive impact on social academic outcomes. This paper proposed a teaching and learning ecosystem for Gen-Z students and the researchers developed RICES concept and Fish approach to support their ecosystem. This study will investigate and explore the implementation of RICES (Relationship & Role, Introduction, Communication, Educate and Structure) strategy to build and foster the teaching and learning ecosystem. The ecosystem will ensure educating this generation will be more holistic whilst enabling the learning-centred approach to be effectively used. The paper is concluded with the approach and impact of RICES. A descriptive research method was conducted with the tertiary students. The result revealed that RICES strategy shows a significant relationship among of each element. Students also shows positive academic result and learn to communicate better.

Keywords Gen Z; Ecosystem; 21st century teaching and learning; Education

Introduction

The term ecosystem is describing as all of the residing things in a place and the way they affect each other (dictionary.cambridge.org). In this study, the researchers justify that the learning process and relationship between students, lecturers, universities and technologies need to be available as one ecosystem. Learning

ecosystem is related closely to classroom management and teacher-student relationship. These factors will lead to an effective classroom management. A quality and great teacher-student relationship can develop positive attitude. This will also encourage student engagement in class (Bear, 2015). In recent years, educators worldwide face challenges to attract and motivate Generation Z (Gen Z) because of their characteristic. The ecosystem can leverage on students' strength to succeed if lecturers are able to understand and strategize accordingly to the learner's characteristics. Subsequently, education should not evolve around a relationship where teachers solely lecture in a one-way delivery, while expecting students to merely listen and memorize. (King, 2012). Today's learner is different because Gen Z learns across all environment. Therefore, educators need to switch to a more interactive learning ecosystem that suit the 21st century learning trends (Elizelle, 2017).

Problem Statement

This paper intends to highlight that Gen Z students always face difficulties on certain types of subjects (theories and calculation subjects). They face problem in understanding and memorizing the content and formula. When student face such problem, they will generally lose interest and attention in class because they have no interest to learn the subject.

This situation deteriorates when they start to skip classes and eventually failing the subject. The impact of this attitude is that students will focus on what they like and ignore what they dislike. By the end of the trimester, students will simply voice out that they prefer calculation subject compared to theory subject or vice versa. Subject preferences by students depend on how they can understand and memorize the content of that subject. Students from this generation is knowledgeable because they can access everything through multiple online sources (Elizelle,2017). Because of this kind of thinking, students will think there is no problem if they are unable to understand in the classroom because they can search through google. This issue if not taken care of it will affect the ecosystem; when students loose interest in a subject their focus will absolutely not be there. They will be disconnected from the ecosystem, which means the link to the ecosystem is not there.

Research Objective

The ecosystem is mainly built to have a more immersive teaching and learning environment. This is in line with Malaysia's education aim in Halatuju 2, which enforces on student-centred learning.

Research Question

- i. How can blended learning help to solve all issues highlighted?
- ii. What are the best strategies and approaches to be included in teaching and learning ecosystem?
- iii. Which element between 'R, I, C, E and S' play an important role for teaching and learning ecosystem?

Literature Review

Generation Z

Generation Z (Gen Z) who were born in the 1990's is exposed with the web, internet, smart phones, laptops, freely available networks and digital media (Tulgan & Rain maker Inc.,2013). This generation of students are unique and definitely different compared to other generations, from the way they communicate, respond and understanding of instructions (Kelley, 2016). Gen Z students in universities are from a generation that demand for more fun and interactive environment in the teaching and learning process (Münevver Çetin, 2019). Educators need to understand their characteristic in order to identify issues that will occur in the classroom. Some of their characteristic, to name a few, includes lack of attention span, underdeveloped social skills, high consumers of technology and pragmatic. Generation Z (Gen Z) is unique and definitely different compared to other generations (Kathleen, 2017). In order to capture the attention of this student, the lecturer must focus on teaching and learning strategy that focuses more on student-centred. This is to make sure that students focus in class (Philip & Garcia, 2013).

Gen Z is the latest generation that will be going to universities, so it is important for educators or the education sectors to focus on designing and delivering the content which will match their learning style. (Wiedmer, 2015).

Every student has their own learning style and behaviour; compared to previous generation, the way they respond to their lecturer is totally different. (Kelley,2016). In order to make sure an effective and engaging teaching and learning ecosystem is in place, educators need to make sure they understand the Gen Z characteristic well. Below are some of the characteristics:

(i) Know-How generation

Students from this generation is knowledgeable because they can access everything through multiple online sources. They expect interesting of education process to gain more information. (Elizelle,2017).

(ii) Technology usage

Children from this generation is connected to the world via technology. Therefore, they demand more activities that are technology based (Rothman,2016).

(iii) Banned traditional teaching method

Students from this generation still demand for traditional contact session (face-to-face) with the lecturers but they really ban the traditional teaching method. They prefer creative classroom that can blend in lecturing with some activities that are related to the syllabus (Elizelle, 2017).

(iv) Short attention span

This generation shows a low focus and attention span when it comes to complicated or problematic questions. As a result, they tend to lose focus and lost interest in the activity or subject (Kelley D, 2016).

(v) Visual ability

Auditory learning by having traditional lecture and power point slide is 'so yesterday' and they do not like this kind of teaching style anymore. Collaborative activities, role modelling, gamification and others which are new to them are much appreciated by these students (Rothman, 2014).

Classroom Ecosystem

An efficient and impactful teaching and learning process in a classroom only happens when educators manage to join the dots of all the components involve in the process while creating a transformative teaching and learning ecosystem. The ecosystem in a lecture class should be well researched, well organized and well delivered (Carol H. Sawyer, 2010). Managing classroom in this ecosystem requires a more student-centric learning rather than a teacher-centric way. With this, the focus is now on students' involvement in the learning process.

Developing a constructive relationship between the educator and students is a fundamental factor in building a high standard of teaching and learning experience. A partial research in Malaysia has found that students who held positive attitudes towards the cheerfulness in the classroom have higher student satisfaction (Afzal, Ali and Hamid, 2010). When the class is fun, students are happier and more enthusiastic about their study, thus resulting in higher performances. Students engaged and involved in class activities will create positive feelings and become autonomous. Activities lead to students potentially learning and at

the same time have fun (Garn and Cothran, 2006). Hence students will have a positive impact on their feelings by the involvement to educational life.

With these common issues happening in the classroom, lecturers need to change their strategy and develop a teaching and learning ecosystem. This ecosystem will be supported by classroom management and 21st century learning content. The ecosystem should be filled with positive energy. In order to create a more diverse ecosystem, educators need to empower their students to create the relationship between ideas, theories and competencies that they learn in class to their personal experiences. Educators need to foster a teaching and learning ecosystem, as this ecosystem connects issues, solution, teachers and students with one another. Identifying and learning the Gen Z characteristic is vital in developing a solution to make sure the class is managed well. This is when the RICES strategy comes into place.

RICES Strategy

Relationship and Role

In order to develop a teaching-learning ecosystem, a relationship between lecturer-student must be developed in the early stage. This relationship is related to “closeness”, and with established trusting relationships, they will put more effort in classroom (Driscoll & Pianta, 2010).

The ecosystem is built on this trusting relationship, which makes the lecturer themselves playing an important role in shaping the ecosystem by showing good attitude and motivating their students. In order for the teaching-learning ecosystem to work, both lecturer and student need to have positive attitude.

Importantly, developing a strong relationship and collaboration with teaching-learning process takes the common set of values, goals and shared commitment by both learner and teacher. At the end of the day, a good relationship with the educator links with student’s motivation to learn (Wentzel, 2010).

A positive teacher-student relation can bring to a sense of attachment towards the educator and the subject. This is important to support the ecosystem and directly solve issues highlighted in this paper where students tend to get bored by the subject they dislike. Because they have developed a strong level of confidence to experiment and succeed in an environment that is created by the educator where they are not restricted by fear of failure. At the same time educators will play the role as motivator to motivate them to strive harder if they fail to meet their objective. Students will affirm and support educator’s effort and try

their best to achieve good results. Based on the research by Hamre and Pianta (2001) stated that students that are close with their lecturers will be more self-motivated and develop strong passion in pushing themselves over the limit to gain knowledge and achieve better grades in examination. With this, students will willingly participate in any of the activities done in and off-class.

Student in this generation sometimes are overly attach to their mobile phone. It will be a disturbance if they do not focus in class by playing mobile phone games in class. It will disrupt the class because the lecturer has to stop lecturing and advice the students. But when students–lecturer have a strong bond together they are less likely to behave that way. Students willingly and readily accepting the rules set by the lecturer. It an article by Gunn (2019), positive teacher-student interaction can stop the cycle of misbehaviour in class and change the dynamics of the environment. This will directly support the entire teaching and learning ecosystem.

Teachers in this new era of education not only play the role as a teacher but as a facilitator, a resource, a guide, a coordinator, a motivator and a mentor. There are a few questions that we must ask ourselves as an educator or lecturer. For example, what is my role as a lecturer? What is my effort in bridging the interaction with students? What is my contribution to my students' achievement and learning process? Each of this is answered by seeing myself playing many roles. Based on Sawyer (2010), she sees herself as a professor and specific subject matter expert. But I believe in order to develop a teaching and learning ecosystem a lecturer should play more than their initial role.

Introduction

Students tend to disconnect or not interested to take part in blended learning or activities in class because they do not understand the objectives of the activities. Many lecturers fail to implement blended learning due to not introducing the activities in a proper manner. According to Blake (2009), students will feel demotivated and will not participate in any of the activities if they have lack of knowledge in using the blended learning tools or it is not clear with the instruction of the activities. With a proper introduction of the activities, students will understand and be more willing to do it. Based on Hoy and Wettstein (2006), students and teachers are the 'central participants in classroom interactions', so it is important that lecturer introduce some details of the subject such as learning outcomes, instructions or guidelines of the activities and the benefits of the activities.

Educators must be aware of the need to engage with their students. Therefore, providing an effective instruction to use and learning tools is essential. This is true, if we refer to the findings of Arthur (2003), where he found out that successful introduction of activities comes with a few steps which includes defining the activities, explaining the aim, explaining the benefits, where, when and how it will be used. Those steps will be supported and guided by the lecturer. Without clear information, students will not understand what they are doing thus losing interest in participating in the activities.

Communication

Lecturing covers the biggest portion in the teaching-learning process, so it is vital that the lecturer deliver and communicate the information clearly and precisely. This is because your voice and the way you use it is probably your most important tool as a lecturer. If you get it right, your students will understand better. Educators should also avoid from delivering a monotonous and “un-creative” lecture, because students often demand for a visual, fun and creative way of teaching process. Managing the class will be easier and smoother if the communication is engaging and interactive. This is important because a well-managed classroom need to have a clear and proper communication. Communication can also lead to building relationship with everyone involved in the teaching and learning process. Educators have to be like entrepreneurs, they need to consider the method of transferring information, as an added value to their service.

Teaching methods are closely related to how a lecturer communicate in class. Teaching method is important to make sure there is fun and meaningful teaching and learning experience. During lecture, the information should be communicated by using simple, fun and easy to understand. Sometimes educators need to consider the best method and approach in order to help students achieve their best results. Like entrepreneurs in business, educators must be unique in their performance, which includes the subject they teach, their knowledge and personality. Creativity in its essence is noticeable and causes a reaction because it is different from ‘habitual’, so visual creativity if we instil it in our delivery of lecture, it can and will attract audience’s attention and causes attitude and reaction from the students.

Educate

Educating Gen Z requires a learner-centric environment, rather than lecture-centric environment. Therefore, as lecturers, they should make sure that the importance of each task or activity is being delivered and guided in a very clear manner (Twenge, 2013). Generation Z wants to see what they do benefits them and the importance of doing it. If a lecturer educates them on the purpose and benefit to participate in the

activities and at the same time the materials used is useful, students will be willing to do it. This is to ensure they are encouraged to be involved in reading and downloading the contents (Holtzblatt & Tschakert, 2011). Students who are not willing to participate in the activities in class, because they don't see the benefits of it, will automatically distort the fostering of the ecosystem. This is because participation of students in the activities is one of the core components that link to the teaching and learning ecosystem. In order to educate them on the benefits of the activities, educators must be able to understand students' needs and wants.

Structure & Strategy

In order to ensure the flow of the ecosystem to be executed smoothly, lecturers need to be very decisive. A proper structure of the classroom teaching plan should be developed. A mix of blended learning and non-tech activities are strategies that can ensure that students' focus is retained during the entire period of class. Lecturers in this new era should not only must know how to implement technology in their classroom but also need to know the right time to use it. Besides that, constructing a structure for classroom management has to be diversified, 'student-centric' and fun. Based on a research by Afzal, Ali and Hamid (2010), student who held positive attitudes toward fun and enjoyed the teaching-learning in the classroom were having higher student satisfaction. Activities lead students to potentially learn and at the same time have fun (Garn and Cothran, 2006). Hence student will have a positive impact on their feelings by the involvement to educational life.

By applying blended learning, students will have more flexibility in learning, and this motivates them to participate in the activities or tasks from anywhere they are (Senffner and Kepler, 2015). This directly will motivate the students to interact and engage in the learning process. When students are motivated to participate, it contributes and strengthens the teaching and learning ecosystem, as it will solve the issue of gen Z student not being able to focus in class.

Each and every student in a classroom has different characteristic in terms of understanding and acceptance level when it comes to studies. Therefore, by using active learning techniques it may engage different types of learners and help some student more than others (Emerson and Taylor, 2007; Durham et al., 2007).

In a study by Ja'ashan (2015), it was found that people who have high satisfaction in blended learning, believe that this approach can improve the teaching and learning experience in class. They also see an improvement in interaction between the lecturer and students. This is vital when dealing with gen Z students whose attention span is very short and they tend to get boring fast if the lecture is boring. Thus, educators need to quickly learn and use different types of teaching tools and strategy in order to capture students' focus and encourage them in their learning process.

By building a well prepared structure of class, students will have diverse experience in class. A classroom that has an engaging, fun and flexible environment, tend to give positive attitude towards the students. In instances where fun is everyday occurrences, student will feel happier and more enthusiastic about their study, thus resulting higher performance (Afzal, Ali and Hamid, 2010).

FISH Approach

Feedback. Student in this generation value lecturers that gives feedback. Therefore, lecturers need to make sure to give continuous feedback to them. Students who show interest or who are willing to participate in class like to receive feedback from their lecturers. Based on Gee (2018), it is clearly stated that lecturer's feedback shows a positive relationship with student's satisfaction. With encouraging and helpful feedback, students will enhance their knowledge in the learning environment.

Interest

To gain their trust and attention, as lecturers we should show our interest on their effort in all the activities and tasks given to them. This will give them the confidence in the subject and continue to accept any blended learning and activities introduced in class. Educators who have interests not only provide knowledge to their students but also making them explore their creativity and inspire their imaginations (Guillory et al., 2016, p. 165). This can only happen if educators show their enthusiasm and excitement when they are teaching. Students will have more trust and confident to lecturers that care more than just their examination results. In a study by Xiao and Wilkins (2015) shows that if the lecturer shows no motivation in conducting their class, there is a high chance that the students will also have less motivation in learning and participating in class.

Support

In this 21st century learning, lecturers need to play multiple roles in classroom. Supporter is one of the major roles to play. It is crucially needed in the ecosystem to enable Gen Z student to continue develop positive behaviour towards the subjects and class. Educators who build a supportive classroom environment will provide a base where students are encouraged and motivated to grow both academically and personally. Honour. As a lecturer, we need to honour every single success or failure students make in class. This is part of motivation for them. They will feel appreciated and feel the sincerity of the lecturer. Academic reward can be used as one of the ways to honour the student’s effort and achievement. Rewards are great motivation to induce hard work or commitment to participate in activities in class. It is a creative way to support the transformation of knowledge. This will solve students issue of disengagement in class. Hence strengthen the bond in the ecosystem.

Research Methodology

This study investigates Generation’s Z from MMU regarding the best strategy to be applied in class in order to have win-win situation between lecturers, students and university. To achieve the objective of the study, the researcher conducted online questionnaire which has been distributed to Diploma Business Administrations students in MMU Melaka. Sample size of 60 out of 152 respondents were taken to represent the population.

This questionnaire consists of 23 questions including questions about respondent’s background information, relationship, introduction, communication, educate and structure.

The Research Framework

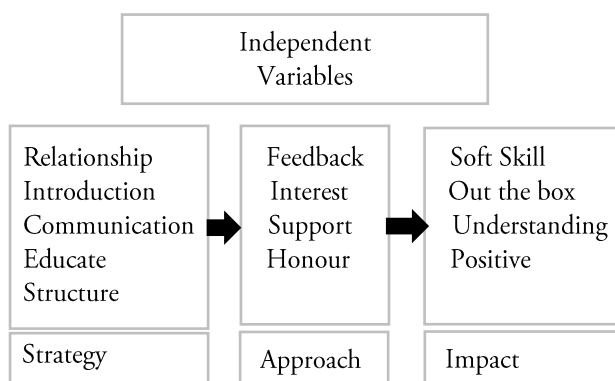


Figure 1 A Descriptive Framework of Teaching and Learning Ecosystem

Results

General questions about Blended Learning (Tech and Non-Tech) has been asked to the respondent.

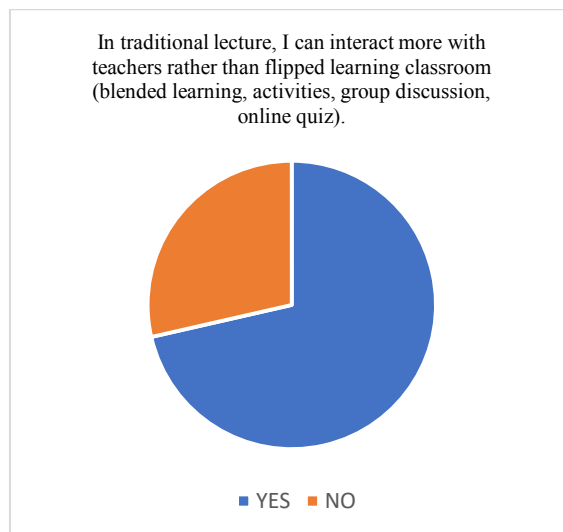


Figure 2 Question 1

Most of the educators understand that blended learning is purely about technology-activity-based. Result above showed that, in whatever activity conducted, two-way communication is still needed by Gen Z. The information transferred to the students need to be clear and precise.

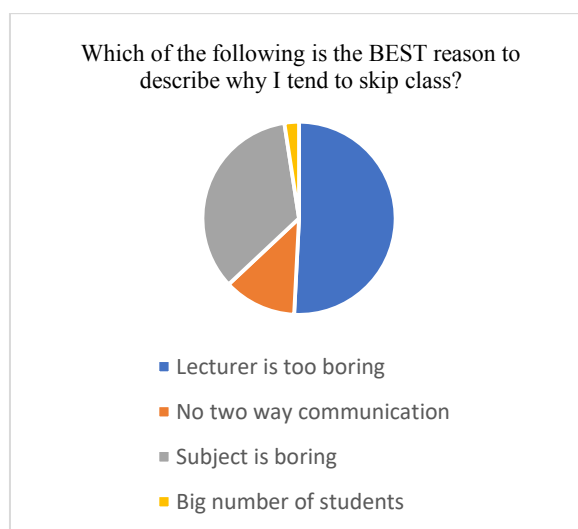


Figure 3 Question 2

The researcher next investigated the main factors of why students keep on skipping few classes. In this study, most of the Gen Z agreed that ‘lecturer is too boring’ is the main reason why they tend to skip

classes. Additionally, many of the respondents also agreed that, the other main reason why they tend to skip class is because of the subject is too boring. Results showed that, attractiveness in class is the main indicator to solve the main problem of this generation.



Figure 4 Mean for R, I, C, E and S

In the last section of the survey, the researcher intends to determine which RICES strategy is the most impactful to capture their attention in class. By using SPSS, mean for each independent variables were tested in order to know which element gives highest rating to the strategy.

Mean value for all strategy is above 3.50. Based on the result, C (communication) is the highest mean. It shows that communication is the core element in the ecosystem, where else by looking into the other components in RICES strategy, communication is link to every component.

Conclusion

This study also proved that it is vital to have a teaching and learning ecosystem in order to teach the Gen-Z students. By having and implementing the RICES strategy lecturers can manage their class in a more engaging and interactive way. The issues that arise from the characteristics of this Gen Z student can be solved if there is proper classroom management and positive ecosystem.

For educators, successful classroom management is when all students can focus their attentions, give feedback and participate in class. Meanwhile, students will give their best when they are attached to classroom's positive ecosystem. Researchers believe that by developing RICES concept and with the support of the FISH approach, a more transformative teaching and immersive learning can be developed.

Limitation

The sample size of the study is very limited because of time constraint. This study was conducted at the end of the semester. It was very challenging to collect the respondents because it was on study week and students were not around campus.

Another limitation is that the students involved in the study were only diploma in business administration students. Thus, it would be beneficial to conduct a similar case study with other faculty and courses to find out whether it's the same opinion or a different one.

Recommendation

This study only covered independent variables. It would be more beneficial to conduct a study to investigate the relationship between RICES and a dependent variable. Therefore, more tests using SPSS can be done. Researcher suggests to conduct a similar study to secondary school's students so that educators can be prepared of new generation's style of learning.

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