# Acing the A's of Exit Ticket: A Formative Assessment Strategy to Improve Student Engagement in College Virtual Classes

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Abstract: This action research was undertaken to determine the effects of digital exit tickets on student engagement, serving as formative assessments in higher education classrooms. The intervention was implemented in two classroom premises. A group of 120 students experienced the teaching and learning technique within the limits of six weeks. These students are all college freshmen enrolled in the course Purposive Communication at Don Honorio Ventura State University. With quantitative-descriptive methods, the researchers carried out the investigation proper using survey questionnaires. Data obtained from the analyzed results showed that these exit tickets had positive or statistically significant effects on student engagement, specifically on students' understanding, communication with the teacher, motivation, and involvement in the learning process. This study reports the strong agreement of the respondents to all the indicators of every aspect of engagement; ergo, holding excellent feedback. Additionally, the self-reported weekly feedback form allowed the students to communicate their engagement levels every week. It was affirmed that the use of exit tickets acted as a contributing factor in the favorable descriptions. In line with this, the consistency of levels marks how the substance of exit tickets was founded on students' feedback.

**Keywords**: exit tickets, student engagement, formative assessment, college

#### 1. Introduction

From blank stares up to hesitant smiles, leaving the room with uncertain thoughts circling in their minds, the students finish the learning session with teachers' contemplating how to make today and tomorrow worthwhile. Familiar? This is one of the myriad scenarios that teachers meet in the panorama of education. Facing the world today, it is evident that the landscape of learning extended to flexible avenues with the aid of rapid-developing technologies; ergo, establishing the space of online learning and catering e-learning experiences to many students at almost all levels. More discoveries and opportunities, yet, here are to the same challenging classroom scenarios, with greater daunting appeal this time. In view of this, one of the marked concerns in classrooms is student disengagement. How can teachers help students feel invested in their learning within the new setting? They are straight off checking their teaching toolkit and put on their thinking caps to develop practical strategies and techniques.

These days, one of the prominent indicators of disengagement in virtual classrooms is the act of students opting not to participate in class discussions and when the teacher's comprehension language comes in—"Class, did you understand today's lesson?" "Are you following?" "Can you share your insights about this?" they tend to stay passive, featuring their nodding heads, yeses, or worse, distracting silence. According to Chipchase et al. (2017), student disengagement, in its intricate yet fluid construct, constitutes the association of three domains—behavior, emotion, and cognition. It has been viewed and described through various conceptualizations ranging from students' negative attitudes towards intellectual pursuits, lack of involvement in social

activities extending to alienation, or being lost in the learning process. Disengagement is said to be shaped by intrinsic and extrinsic factors. This entails psychological factors, preparation and capacity for academic transitions, financial demands, instructional practices, academic facilitators, and the contemporary one, the growth of online teaching and learning. Pursuant to that, a growing body of literature paid particular attention to how flexible learning environments have been contributory to students' disengagement. It has been demonstrated that students' involvement in online discussions declined compared to face-to-face education. Farell and Brunton (2020) even stressed in their study that despite having a firm and sound class community in classrooms, it was an isolating experience for students to be in virtual classes—a situation which may have caused the disengagement of students in the said mode of learning. Time management struggles persisted, leading to stress and fallback from learning interests. What is more, higher education classrooms in the new normal are affected for a considerable time now and the situation needs mending.

Disengagement may drastically affect students to the point that it may result in demotivation, unsatisfactory learning experiences, or withdrawal from the learning endeavor (Kahu et al., 2019). Predictors of student disengagement entail student-related problems such as educational performance, student behavior, and demographic factors; and family or school-related conditions including socio-economic status, educational support, and school-level characteristics (Rickinson et al., 2018). Similarly, it characterizes the practices or attitudes that prevent students from gaining beneficial experiences schools can offer. Viewed as the collection of behaviors, it may involve unfavorable or detrimental actions like inattentiveness in class, absenteeism,

poor attainment of class work, or poor development in learning. Disengagement evident in schools lays down a basis for action (The Careers & Enterprise Company, 2016). The aforementioned problem should be addressed accordingly as there are risks concerning family, community, personal, and academic grounds. Moreover, this prominent problem can be attributed to the targets of participation, studying efforts, and assessment that are significant to students' academic performance (Victoria State Government, 2021).

Amid the pressing need to enhance the culture of learning, especially in distance learning, student engagement must be given utmost priority. It is also imperative for teachers to rejuvenate their students' willingness and desire for learning. To emphasize, Kennedy (2020) revealed that teachers should design materials or activities intended to aid students in acting and reflecting on their current understanding. In light of all that has been stated so far, teachers need a particular strategy that will improve engagement or prevent disengagement. One purposeful learning activity that can increase interactivity and engagement would be having a formative assessment, specifically exit tickets, and about this time, it will be digital.

Formative assessment is an integral and crucial component of students' learning status in learning. It is designed to reveal their deeper thinking. Some educators and practitioners tend to overlook its importance as it is only recorded, not graded, or, at times, they place more emphasis on summative assessments. But in reality, formative assessment bears great significance in elucidating learning intentions and improving learning outcomes. It also plays a huge role in classroom practices and the instructional decisions of teachers. As highlighted by Wilson (2018), utilizing formative assessments directs teachers toward students' zone of proximal development, meets their needs, and fills in gaps in understanding before proceeding with the material. This also provides assistance to students who experience struggles in catching up with the learning goals in class. Formative assessments inspire students to articulate themselves and capitalize on their critical thinking skills or own learning exploration free from the fear that may exist in other forms of assessment. Besides, the most substantial quality of this assessment is that students grasp the habit of favoring learning over grades, and from the vantage point of students, a lot of positive effects can be realized in formative assessment practice (Ozan and Kincal, 2018).

To be particular, exit tickets are one of the most useful ways to increase students' engagement in the topic and monitor their understanding. This kind of formative assessment allows them to make a note of their discussion takeaways, any questions lingering inside their minds, and also feedback on the teachers' learning session. Further, it has conclusively affirmed that learners who are exposed to answering exit tickets give them opportunities to gain self-efficacy and more academic achievements (Izor, 2019).

Exit tickets are said to be versatile since utilizing them in various content areas is consistently possible. They also guide students to demonstrate their thought processes and can consequently provide the teacher a snapshot of their disposition in the space of learning. As a case in point, the information derived from the exit tickets can assist the teacher to personalize classes in accordance with the students' learning needs instead of continuing and giving them the exact lesson presentations that have been the case in the past. The teacher can easily determine what key concept needs re-teaching or reiteration during discussions (Berenson, 2017). On that premise, exit tickets can foster teachers' reflective thinking concentrated on their curricular practices as well. The value of feedback reverberates and eventually encourages them to support students in reaching their further learning goals.

Collectively, the foregoing studies outline a role and highlight the need to strengthen or support student engagement in higher education levels which can enhance the present education model. Thereupon, this action research aims to offer great insights into exit tickets' capacity to improve students' engagement in two virtual classroom environments where the researchers observed indicators of disengagement. The lack of engagement manifested in students' passivity during graded participations or typical insight-sharing activities, queries not raised during class and transpires beyond class hours, monitored absences, limited inputs, and devoid initiatives. When total silence pervades the synchronous session, the challenge to assess students' cognitive, behavioral, and emotional dimensions would persist. Moreover, taking a closer look at this situation, the researchers recognized the need to substantiate the intervention among first-year college students enrolled in a Purposive Communication course.

# 2. STUDY PURPOSE

The researchers seek to investigate and analyze the effect of exit tickets on student engagement. Focusing on the essential aspects, they intend to answer the following questions:

- 1. Does the use of exit tickets in virtual classes as an instructional strategy enhance students' understanding of the learning content?
- 2. Does the use of exit tickets in virtual classes reinforce motivation to learn among students?
- 3. Does providing exit tickets in virtual classes improve students' communication with the teacher?
- 4. To what extent do exit tickets in virtual classes encourage students' involvement in the learning process?
- 5. What are the engagement levels of students during the intervention?

# 3. INNOVATION, INTERVENTION, AND STRATEGY

On one hand, when the students feel engaged and immersed in the learning process, it is more likely that the level of their understanding will increase, improve, or even advance. In light of this, student engagement drives students

to have a positive approach to education, serving as an indispensable component to students' academic achievement. To prove, in 2017, the Youth Truth Student Survey affirmed that deeming student engagement as a fundamental indicator of academic achievement as well as perseverance in school, teachers can vastly benefit from investigating and measuring the underlying substance of it. Further, it has been shown that a number of the engaged students felt accomplished about their schoolworks and were encouraged to work harder.

On the other hand, due to the alarming crisis brought by the COVID-19 pandemic, schools and universities forcibly took a sudden radical shift from face-to-face classes to virtual meetings, eliciting unwanted challenges and odds for the future of the Philippine educational system. Thus, with an image of students coping with the unfamiliarity of what they coin "new normal," the engaging culture of learning will always be crucial for every one of them, thereby making student disengagement manifest just around the corner. As noted by Maimaiti et al. (2019), several studies about student disengagement occurring in online learning avenues have presented factors that may contribute to the frustration of students, such as limited or inadequate timely responses from some participants during online discussions (Hew & Cheung, 2012), puzzling instructions (Hew, 2018), and varying technical issues (Hara, 2000). Therefore, the more that the students feel disengaged or detached in learning, the higher the chance that they may not grasp the heart of the lesson.

By and large, the highlighted concern captured in online settings invites educators to address it and come up with intervention strategies. In the course of the study at hand, the researchers utilized a formative assessment strategy by way of exit tickets to improve student engagement among students learning inside college virtual classrooms.

## 3.1 Exit Ticket Intervention

Given the fact that the reality of education students experience today takes place through distance learning, teachers' role to meet students' needs with what they have is an actuality that cannot be compromised. Hence, with an awareness that technology has been a functional utility in the online learning environment and an understanding of students' access inequity, this study suggests that the use of exit tickets as formative assessment in college classrooms does not bear a great need for a technological application that carries large amounts of data but rather creative digital exit slips using Google forms. As per LoBue (2020), Google Forms has always been part of the low-cost and low-bandwidth platforms used as a resource for tracking students' progress of learning. It was also pointed out that this online software can function smoothly on both phones and computers carrying its userfriendly interface and can therefore attend to students' demonstrated needs. The researchers used this tool to make certain that students' responses were all collected and stored properly. After all, the prime goal of this formative assessment is to improve engagement among students inside the virtual classroom.

Drawing on the concept of exit tickets, Paz-Albo and Escobar (2016) stated that a lot of K-12 teachers employ exit tickets where they pose questions at the end of the discussion as a formative assessment, yet it was perceived that these slips were rarely used in the college classroom settings. Exit tickets have been instrumental in yielding and preserving the active engagement of students in the process of education. This helps students to connect with the content, practice self-reflection, improve behavior along with academic progress, and eventually form their future learning aims. On that account, in this endeavor, the students submitted their digital exit tickets via Google Forms before they formally left the virtual classroom. The content of the exit ticket entailed formative assessment questions crafted using creative phrases for each part. Each part's title appeared as follows: Appraise today's instruction (satisfaction with the instruction), Amplify your AHA! (documentation of learning), Advise and Anticipate (further clarifications or expectations about the subject), and Activate your self-talk (self-assessment and motivation). The concept and creation of every part's focus were inspired by the ideas of Marzano (2012) who highlighted the four kinds of exit ticket prompts that can effectuate different outcomes: prompts that present students' level of understanding, prompts intended to promote self-analysis, prompts that stress instructional strategies, and prompts that can serve as open communication tools to teachers. This exit ticket required students to provide short answers that can be done within approximately five minutes. Apart from this, additional sections containing a motivational quote and a stamp of accomplishment will be added to make it more rewarding and enriching.

#### 4. METHODS

# 4.1 Participants and/or other Sources of Data

This research is oriented toward the use of exit tickets as a form of intervention to improve students' engagement with the population of interest—the students under the College of Business Studies of Don Honorio Ventura State University this academic year 2021-2022. The said research took effect at the onset of the second semester of the academic year up to April 2022 after the midterm examination of college students.

In selecting the participants, the researchers employed the technique termed complete enumeration or census procedure. It yields profound importance to the entire target population sharing the same set of characteristics. Every element of the population will be chosen, studied, and analyzed; thereby, generating a true measure of the parameter. Also, it provides the researchers a grasp of the picture in great detail, increases accuracy, and lessens potential surmises (Arnab, 2017). On that note, the study's key sources of data were 120 first-year students under the College of Business Studies, specifically coming from Bachelor of Science in Accountancy section 1-I and 1-L.

# **4.2 Data Gathering Methods**

The approach utilized in this action research is quantitative since data were measured with objectivity and universality; thus, producing evidence-based and quantifiable outcomes. Considering that education and teaching strategies are the objects of study, it is important to study them deductively (Ali, 2021). The researchers relied on the precise, numerical data gathered from students' responses with a basis on the formulated research questions. Moreover, the conduct of this study was influenced by the performance engagement of the BSA students observed and analyzed by the cooperating teacher and student researchers.

With the intention of gathering quantitative insights, a survey questionnaire was used as an instrument in the study. It is a method that enables the researcher to collect primary, well-defined data and conduct a comprehensive investigation of a variable (Ali, 2021). By use of a four-point Likert Scale, a survey questionnaire containing twenty scaled questions answerable through the provided choices was utilized to answer the first four research questions. The selected scale set is presented in Table 1 below. Following this is Table 2 containing the interval measurement used for the weighted mean description (Pimentel, 2010). Furthermore, the content dealt with significant aspects contributory to students' engagement.

Table 1: Likert Scale for Exit Ticket Experience Survey

Scale	Assessment	
1	Strongly Disagree	
2	Disagree	
3	Agree	
4	Strongly Agree	

**Table 2**: Guideline to Determine Weighted Mean Interpretation (4-point Likert Scale)

Interval	Description	
1.00-1.75	Strongly Disagree	
1.76-2.51	Disagree	
2.52-3.27	Agree	
3.28-4.00	Strongly Agree	

The data collection started as researchers sought consent from the participants and the cooperating teacher to pursue the study by means of their participation. This was meant to inform them about the research's nature and purposes. To ensure organization and smooth flow of the process, the researchers created a Google Classroom for the respondents to join in. Thereafter, the researchers administered the Exit Ticket Experience Survey by posting the Google Form containing the said survey questionnaire and monitored the respondents as they answer it within the limits of fifteen (15) to twenty (20) minutes.

Finally, to answer the fifth question, the weekly student feedback instrument from the action research of Haagenson and Schlangen (2016) was adopted. This entails students' self-reflections on their engagement level after every week's session. Table 3 shows the scale set and Table 4 presents the values utilized for descriptive interpretation.

Table 3: Likert Scale for Weekly Student Feedback

Scale	Assessment	
1	Not at all	
2	Somewhat	
3	Very	

**Table 4**: Guideline to Determine Weighted Mean Interpretation (3-point Likert Scale)

Interval	Description
1.00-1.66	Poor
1.67-2.33	Good
2.34-3.00	Excellent

Validation of Questionnaire

According to Surucu and Maslakci (2020), validity pertains to whether the instrument is measuring what it claims and if it is appropriate based on the aims of the research. With that said, the predetermined survey questions of the present study were validated with the aid of four research experts who have relevant knowledge and experience in the field.

To determine the extent to which every item in an instrument serves its purpose, face and content validity should be noted. It can aid the researcher in ensuring the readability of all statements and appropriateness for the level of the participants; identifying the most suitable expressions to be used in the measuring instrument; and gauging any quality or behavior (Surucu and Maslakci, 2020).

#### Feasibility of the Instrument

The researchers took into account the feasibility of the instrument to refine the data collection process. In view of this, the Exit Ticket Experience Survey instrument underwent pilot testing after the validation. According to Fraser et al. (2018), pilot testing is administered with a small group of participants similar to the intended sample. It is a method where researchers can determine if the instrument poses difficulty among the respondents or identify parts that need modification and enhancement. With the study at hand, the researchers made use of the Google Classroom as a platform for conducting the pilot testing.

# Reliability and Consistency of the Instrument

It is essential to consider the stability of the data gathering instrument to establish its test quality. With that said, the researchers utilized the Cronbach alpha coefficient, a method or an indicator used to measure the scale reliability and internal consistency. It is anchored on assessing if the items reflect the same construct with the correlation of independent questions as its basis (Jain and Angural, 2017). The Exit Ticket Experience Survey instrument has a Cronbach alpha of 0.93, which marks the said instrument as excellent.

# 4.3 Data Analysis

After the collection of data, a descriptive analysis was employed to understand the broader picture of the participants'

insights about the exit tickets, particularly their impact on their engagement. As noted by Loeb (2017), this procedure is substantial to create measures in education research, to characterize the veracity of implementation, and to generate exploratory directions. The analyzed data is valuable as it provides appraisals of whether participants have positive responses to the intervention. The researchers utilized tables or graphical presentations to highlight, describe, and evaluate data. Moreover, the weighted mean was used as a statistical tool to interpret and understand the participants' assessment of the exit ticket intervention.

# 5. DISCUSSION OF RESULTS, CONCLUSION, AND IMPLICATION

#### 5.1 Discussion of Results

This section imparts the analysis and discussion of the results, the synthesis of the findings' core points, and the record of the researchers' authentic reflections on this research experience. Through the collected data yielded from the participants' relevant experience on the exit ticket intervention, the presented results are arranged in line with the research questions necessary to be tackled.

Consistent with the research's quantitative design, below are the tables containing the statements from the survey questionnaire with their weighted mean as well as the grand mean and rankings. The descriptive statistics shown describe and highlight the significant results to help understand the study's constructs of interest.

**Table 5**: Digital Exit Ticket as an Instructional Strategy to Enhance Students' Understanding

Indicators	Weighted Verbal		Rank
	Mean	Interpretation	
1. It helps me review and remember the core concepts of the lesson.	3.78	Strongly Agree	1.5
2. It makes it easy for me to identify the key points of the lesson.	3.78	Strongly Agree	1.5
3. It assists me in having an in-depth processing of the lecture.	3.64	Strongly Agree	5
4. It helps me refine what I already know as well as reinforce new information.	3.72	Strongly Agree	4
5. It fosters new ideas relevant to the existing ones.	3.75	Strongly Agree	3
Grand Mean	3.73	Strongly Agree	

Table 5 shows the weighted mean interpretation of the indicators supportive to how digital exit tickets can be an instructional strategy to enhance students' understanding. In accordance with, a grand mean of 3.73, demonstrating a "Strongly Agree" overall interpretation, was recorded.

As revealed in the results, the highest value of 3.78 was obtained from items 1 and 2, respectively. The respondents strongly agree with item 1, which reflects the idea that digital exit tickets help them review and remember the core concepts of the lesson. Correspondingly, data illustrates how item 2, indicating digital exit tickets make it easy for students to identify the key points of the lesson, bore the same value as the first one; ergo, revealing respondents' assessment—strongly agree. These data agree with the findings of Basco (2021) affirming that the utilization of these tickets acts as a vehicle for reviewing a material (to improve recall abilities) and grasping the gist of concepts taught. It checks students' comprehension and allows them to outline essential elements from lessons and improve their understanding.

These results are further supported by the respondents' strong agreement with the fifth statement, "It fosters new ideas relevant to the existing ones." It can be gleaned from the presented data that the statement holds the value of 3.75. Digital exit tickets also helped the respondents refine what they already know as well as reinforce new information. This indicator received another strongly-agreed assessment with the computed weighted mean of 3.72. These two consecutive points accord with the observations of Izor (2019), which showed how this kind of strategy activates students' prior knowledge. It was deemed vital for ensuring the solidity of contents or skills learned and leading students to recognize or form connections with the new knowledge. Moreover, digital exit tickets encourage learners to think critically and bring forward the integration of concepts for a clearer picture of lessons inside the classroom.

Complementary to the former, it can be construed from the results that item 3 pointed out digital exit tickets' potential to assist students in having an in-depth processing of the lecture. Founded on the respondents' survey reports, the statement's weighted mean of 3.64 can be interpreted as "Strongly Agree." This illuminates the idea that digital exit tickets can guide students in interacting with and absorbing the content of lessons. The instructional strategy in focus stimulates students to be prepared for diving deeper or going beyond what is conveyed to them and elaborating points independently to reach a meaningful analysis. Moreover, Berenson (2017) highlighted the point that exit tickets ensure students a space to digest all the ideas and concepts they may have in class or about the tasks they have accomplished. They not only document learning but also value the process of learning.

**Table 6**: Digital Exit Ticket as a platform to reinforce students' motivation in learning

Indicators	Weighted	Verbal	Rank
	Mean	Interpretation	

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1. It makes me intellectually curious about our next lessons in the class.	3.54	Strongly Agree	5
2. It lets me feel comfortable responding to class discussions in a meaningful way.	3.58	Strongly Agree	4
3. It allows me to see teachers incorporate changes founded on my suggestions about our class discussions.	3.60	Strongly Agree	3
4. It keeps my interest in every lesson and helps me to remain task-focused.	3.74	Strongly Agree	1
5. It directs my efforts toward achieving my goals in learning.	3.68	Strongly Agree	2
Grand Mean	3.63	Strongly Agree	

Illustrating the summary statistics, Table 6 highlights the respondents' strong agreement on the idea that digital exit tickets can serve as a platform to reinforce students' motivation in learning, accumulating a grand mean of 3.63.

It can be deduced from the data shown above that digital exit tickets can keep students' interest in every lesson and help them to remain task-focused, thereby ranked first with a weighted mean of 3.74 indicated as strongly agree. In consonance with the aforesaid result, the study of Paz-Albo et al. (2021) pointed out that one of the assets of exit tickets in university is that they increase students' interest, attention, and motivation in the subject, leading them to experience more significant connections with their classmates and teachers. Integrating new technologies in classrooms is also an enabling factor to produce new scenarios involving the development of commitment among students. Besides, it was underlined that digital exit tickets uphold the significance of anchoring students' focus on their tasks instead of competition with classmates. Consequently, task-oriented behavioral patterns coupled with emotional competencies may be developed and can cause productivity.

This is followed by the respondents' strong agreement with item 5 that reads, "It directs my efforts toward achieving my goals in learning." The statement obtained a value of 3.68, which secured the spot of rank two among the indicators. There is no denying that exit tickets have the power to reveal the portrait of students' progress. On that premise, students' learning becomes more transparent, and learning goals become

clearer; students may no longer assume or just guess what they must do to achieve good results. The digital exit tickets set out students' learning goals, provide necessary scaffolding, and help them make sense of their learning efforts (Ozan & Kincal, 2018). Further, this strategy enables students to use their skills to take action and intensify their learning drive invaluable for their learning practices and performance.

With the computed mean of 3.60, the third value with the highest rank belongs to the statement that emphasized how digital exit tickets allow the students to see teachers incorporate changes founded on their suggestions about their class discussions. The respondents strongly agreed with the aforementioned statement. It can be observed that students' suggestions are as integral as their feedback on the instruction. Given this, the exit tickets may impel students to formulate suggestions for improvement in matters like course design, teacher attributes, access to learning resources, assessment practices, or support services. Students can also raise issues to enhance the delivery of learning activities. This kind of process elicited by the use of exit tickets draws on the grounds of motivation. When students see their proposed shifts or modifications in classroom discussion, they will sense a place and the spirit of the learning community. Favorably, the teachers can use the students' suggestions and recalibrate the use of teaching approaches rooted in students' needs and preferences (Basco, 2021).

It is also apparent in the results that respondents reported their view on digital exit tickets' positive function to let students feel comfortable responding to class discussions in a meaningful way. This indicator recorded a weighted mean of 3.58, representing the "Strongly Agree" interpretation. There is a strong need for students to feel secure, included, and supported within the learning environment to involve themselves in various activities. Exit tickets as formative assessments can be culturally sensitive in nature and can develop behavioral or social skills. The present results agree with the findings reported by Izor (2019), in which exit tickets are found to be helpful in making students feel at ease in participating in their learning sessions. The author also shared that with the use of this intervention, a positive transformation of a particular student from passive to active learner came to light. From this perspective, digital exit tickets can create a workspace where students can open up and feel confident sharing their views and inputs with the class.

What is more, item 1 demonstrating how digital exit tickets can make students intellectually curious about the next lessons in the class obtained a strong agreement from the respondents. It can be seen that it received a weighted mean of 3.54, ranking 5th among the pointers under this category. One of the targets of teachers in e-learning is to guide students toward establishing, strengthening, and maintaining curiosity in learning. By means of digital exit tickets, students are able to respond to the leading questions (intended to help students search for more knowledge) posed by the teacher. Questions are aimed at inspiring students to visualize what is beyond the

subject matter presented and have an outlook of the subsequent learning experiences (Abulhul, 2021).

**Table 7**: Digital Exit Ticket as a means to improve students' communication with the teacher

Indicators	Weighted	Verbal	Rank
	Mean	Interpretation	
1. It helps me in identifying and conveying the difficulties I have in understanding the topic and its contents.	3.69	Strongly Agree	3
2. It assists me in informing my teacher about my misconceptions.	3.62	Strongly Agree	5
3. It provides a way for me to share my feedback on my teacher's instruction and comfort level with the content.	3.75	Strongly Agree	1
4. It gives me an opportunity to ask questions I am most curious about.	3.64	Strongly Agree	4
5. It aids me in determining and communicating the points of the lesson with which I need further clarifications and/or examples.	3.72	Strongly Agree	2
Grand Mean	3.68	Strongly Agree	

Based on the results, Table 7 presents the data gathered from the respondents' ratings about the concept of digital exit tickets being a means to improve students' communication with the teacher. It can be seen that this particular point garnered a grand mean of 3.68, denoting an overall interpretation of "Strongly Agree."

It was revealed that the statement "It provides a way for me to share my feedback on my teacher's instruction and comfort level with the content" obtained the highest mean of 3.75 with a verbal interpretation of "Strongly Agree." Having the "Appraise today's instruction" section in the exit ticket crafted by the researchers, students have the chance to communicate their satisfaction with the teacher's performance in teaching. It also serves as a quick survey on the process of instruction to let the teacher identify whether the students still enjoy and feel the warmth or if an absolute pressure covers their sentiments.

These findings match one of the remarks of Izor's (2019) study that elucidates how exit tickets granted learners an area to convey their comments on the teacher's strategies and learning materials. It can offer an overview of how the teacher can devise actions to enhance curricular practice. On top of that, these adjustments or improvements in teachers' practices may be regarded as relevant feedback from the learners.

Aligned with the same construct, item 5 ranked second among the above-stated indicators. It stresses how digital exit tickets aid students in determining and communicating the points of the lesson with which they need further clarifications and/or examples. The data shows respondents' strong agreement with the statement, recording a weighted mean of 3.72. Communication not only renders information but also inspires thoughts. Without it, preconceptions emerge, messages become skewed, and learning stagnates for the students. Conforming with this idea, digital exit tickets ensure that there is always a way to express their concerns; it is not limited to oral conveyance of questions in class. This may aid them in dealing with their doubts, confusion, or uncertainty in the learning process. To intensify the points mentioned above, Lim (2017) affirmed that exit tickets have the strength to draw on students' understanding and shed light on their queries. The students are able to communicate their clarifying questions through a written medium. This also opens a door for learners who find it inconvenient to tell their teachers their concerns about the lesson (a case that often results in assuming that the classes are making good progress). Further, it is suggested that the positive effect of this strategy has to be strengthened.

Thereafter, the idea that digital exit tickets help students identify and convey the difficulties they have in understanding the topic and its contents got a value of 3.69, indicating a "Strongly Agree" assessment. In every learning session, there are instances in which the lesson's complexity might affect students' reception of ideas. Digital exit tickets provide a way for students to think of the challenges encountered in the learning process and relay them to the teacher to resolve and overcome issues. As noted by Paz-Albo (2021), digital exit tickets promote the identification of students' difficulties, hence, giving teachers a view on how to develop their learning. It also facilitates better access to students' information or problems immediately. Above all, it can be seen that exit tickets are indeed a help resource.

Next is item 4, which recorded a weighted mean of 3.64. This signified the respondents' strong agreement with the indicator highlighting that digital exit tickets give students an opportunity to ask questions they are most curious about. These questions may come in various forms; whether they are convergent or divergent, digital exit tickets present a place to discuss them with the teacher. One part of the exit ticket used in this study, titled "Advise and Anticipate," is intended to gather students' curiosities so that they may be filled in the next meeting. This also applies to the other indicators and is inclusive to strengthen the teacher-student relationship. As claimed by Kiser (2020), exit tickets can be compared to open

forums, where learners can freely share their curiosities to the facilitator of learning. The author further suggests that its use can be an effective way to have an accurate depiction of where students are in the learning material and to what extent they want to explore.

Finally, results indicate that respondents strongly agree with how digital exit tickets assist students in informing their teacher about their misconceptions, presenting a weighted mean of 3.62. There are certain distractions that can influence students' outlook on learning. The same can be said for misconceptions, which often manifest in e-learning premises. Using the digital exit tickets, students can tell the teacher about their conceptual misunderstandings that may be attributed to their preconceived notions. This is in accord with Sadler and Sonnert's (2016) view, which stresses how misconceptions can impede learning, so there is a considerable need for teachers to be aware of students' dispositions and work out an inaccurate understanding.

**Table 8**: Digital Exit Ticket as a mechanism to encourage students' involvement in the learning process

Indicators	Weighted	Verbal	Rank
	Mean	Interpretation	
1. It allows me to reflect and make meaning on what I have learned from the lesson.	3.78	Strongly Agree	1
2. It presents me the opportunities to voice my opinions or express what I think about the new information I have learned.	3.71	Strongly Agree	4
3. It stimulates me to assess my performance and efforts.	3.73	Strongly Agree	2.5
4. It enables me to generate new ideas and concepts.	3.73	Strongly Agree	2.5
5. It urges me to take part in classroom discussions and share my insights about the lesson.	3.62	Strongly Agree	5
Grand Mean	3.71	Strongly Agree	

As shown in Table 8, the respondents strongly agree with the idea that exit tickets serve as a mechanism to encourage students' involvement in the learning process. Based on the result of the analysis, it has recorded a grand mean of 3.71.

It can be explained from the table that the use of exit tickets allows students to reflect and make meaning on what they have learned from the lesson and has garnered the highest value of 3.78 with the verbal interpretation "Strongly Agree." To support this claim, Chang (2019) emphasized in his study that through reflection, students will grow adept at recognizing their capability to learn and structure skills continuously. It enables students to personalize the rationales of the knowledge learned, interpret them, and eventually enhance their conscious awareness. Viewed in this sense, when students practice reflecting on their learning efforts, they can establish personal bonds between theories and the community they are in. Reflection embedded in digital exit tickets provides students an opportunity to evaluate their own learning experiences and see how learning transforms systematically.

Succeeding to these points are the items 3 and 4 receiving a similar weighted mean of 3.73, represented by the respondents' strong agreement. It was revealed that digital exit tickets not just stimulate students to assess their performance and efforts but also enable them to generate new ideas and concepts. Self-assessment is viewed as a vital component in learning to involve oneself in the process. It happens when students monitor and appraise the quality of their thinking or actions as well as mark the correctives to improve performance (Andrade, 2019). Against this background, digital exit tickets promote accountability among learners. They empower students to internalize the measures necessary for goal achievement and develop self-perception that can improve the likelihood of performing well in class. Similarly, successful learning can be attained when the teacher, through exit tickets, allows students to manifest their creativity as they yield new ideas and concepts. This only suggests that the strategy supports students in breaking old, usual thinking patterns and brings forth fresh insights within the educative process.

Apart from these results, the indicator that says digital exit tickets present students the opportunities to voice their opinions or express what they think about the new information they have learned obtained the 4th highest value of 3.71 with a verbal interpretation of "Strongly Agree." This idea is consistent with Pandolpho's (2018) point that students feel appreciated and respected when an experience lets their voices be heard. In this sense, it is more likely for students to meet a sense of belongingness as they express their thoughts and perspectives with regard to the new information presented and detailed to them. Furthermore, the digital exit tickets function as a creative or an alternative expression tool for students to use, enabling them to demonstrate evidence of learning by way of their formulated opinions.

Finally, it can be identified from the table that the fifth statement carries a weighted mean of 3.62 with the verbal interpretation of "Strongly Agree." The statement speaks of the digital exit tickets' capacity to urge learners to take part in classroom discussions and share their insights about the lesson. When students invest in exit tickets, the insights and deep thinking recorded in that space can help them expound during

Vol. 6 Issue 7, July - 2022, Pages: 75-86

the next discussions. Accordingly, the more students get involved, the more that it increases their level of participation as well as the level of their performance. Having digital exit tickets during learning sessions as a method of teaching and learning can actuate class atmosphere with enlightening discussions, bring about two-way communication, and nurture a creative culture for students (Isa & Amirruddin, 2019).

# Weekly Feedback Survey

Every week, a student feedback form requires students to share their experiences in their synchronous class. This was administered to track their engagement levels during the intervention period. The researchers derived data from the averaged responses of students in all accumulated surveys to determine students' engagement levels.

To start, staying focused in class was seen by educators as a pointer to engagement by way of taking responsibility, making an effort to resist distraction, and carrying out tasks well (Nyman, 2017). Of the study population, 69.20% reported that they gave attention to and concentrated in their class as well as given tasks, demonstrating a very focused level. Pursuant to that, 30.66% of students indicated that they were focused but felt sidetracked or vulnerable to avert their attention at certain times. If there were students who were zoned out in class, only 0.14% of the population constituted them.

In terms of commitment in class, the majority (75.79%) of the students pointed out their eagerness to take part in the learning process by responding that they wanted to learn and participate regardless of their grades. An additional 24.21% of students stated that they involve themselves in class to avoid getting bad grades. Concerning students' persistence, an 82.81% response rate from the students reveals that they were constant and determined even in case of being stuck. 17.19% of the population noted that they were somewhat persistent, emphasizing the fact that they nearly quit but still made it through upon the presence of help.

In this regard, the sustained zeal and commitment to obtain learning aims is manifested with the intention of personal growth more than achievement. This shows how students prioritize enhancing their desire to learn and discover new learning opportunities. Bearing that in mind, persistence is a vital quality that universities, especially tertiary degrees, influence students over time. It allows them to remain on track and persevere in pursuit of goals that, even in the face of hurdles, they preserve progress (Dary et al., 2016).

Furthermore, 89.40% of the students reported that what they were learning in class was very worthwhile and valuable. While the other 10.60% understand the significance of their lessons in class. This underlines how engagement anchors the quality considerations in the area of student learning. Students feel more engaged when the lessons they encounter are relevant to and reflective of their experiences.

**Table 9:** Weighted Mean Interpretation for Weekly Feedback Survey

Week No.	Weighted Mean	Description
1	2.79	Excellent
2	2.79	Excellent
3	2.79	Excellent
4	2.83	Excellent
5	2.83	Excellent
6	2.80	Excellent

Table 9 provides the summary of interpretations of students' engagement levels per week. Interestingly, it is apparent in this table that excellent descriptions in all intervention weeks present a positive light; ergo, suggesting how exit tickets act as a contributing factor to the favorable results. The consistency of levels marks how the substance of exit tickets was founded on students' feedback. When administered and data were collated, the researchers were able to see students' current engagement state and render adjustments in the intervention in cases of fluctuations or changes occurring. These results corroborate the idea of Williams et al. (2018), who suggested that tracking student engagement levels sets out a level of clarity on how to develop informed decisions in the distribution of student engagement resources, thereby yielding to the identification of areas needed to be enhanced.

# Teacher's Observations

As the researchers reviewed the exit tickets, an average of 96.94% of the student-participants consistently shared their insights and understanding of the lesson. Compared to teachers' uncertainty about students' levels of understanding before the intervention, an improvement was perceived during the intervention as the majority of the students did not only comply with the activity but answered the comprehension questions with relevance and reasoning. Also, the students were able to express and expound their thoughts through the intervention which is in distinction to the absence of the strategy. Rather than students waiting for summative assessments to apply what they have learned, they were able to practice demonstrating their thinking skills regularly. This potentially impels learners' mastery as well as establishes the habit of learning how to learn.

At another point, with students having their cameras turned on, the researchers noticed that most of them developed the practice of note-taking. It was a notable experience to see them showing their interest and gradually forming life skills that may lead to their productivity. In addition, the reinforcement of motivation was stressed when students conveyed the things they were most excited about for the next meetings. The researchers also identified an improvement with regards to students' communication with the teacher as there were no avenues before to convey their satisfaction with the teachers' instruction until the intervention was implemented. They perceived some queries, confusions, and questions raised from the exit ticket which were not observable before the

Vol. 6 Issue 7, July - 2022, Pages: 75-86

intervention (i.e. whenever the teacher asks for students' clarifications, no one answers). This shows that students became outspoken about their concerns and provided a certain level of assurance that they left the classroom without doubts unexpressed.

Furthermore, there was a minimal increase in student oral participation, which reflects the indicator of students' involvement. This was signified by the average of 17.57% of the student-participants with recitation before the intervention and an average of 18.70% of the student-participants with recitation during the intervention. The apparent increase may be attributed to students' preference to participate using a written medium. Besides, owing to the class time where the teacher cannot accommodate all students answering, the exit tickets turned out to be an aid for the teacher to cater to students' learning needs. To prove, two students shared that not being called during the recitation saddens them. Still, they showed their persistence as reflected in some of their words in the exit tickets—"Bawi next meeting! Fighting! (I'll try again next meeting)" and "It is okay! You still have chances for the next meetings." Moreover, the students were able to respond to teachers' questions with their opinions and elaborations, not just direct answers to the question.

#### 5.2 Conclusion

With the startling changes in the educational spectrum brought by the health crisis, the school community was compelled to build bridges toward distance learning. Consequently, student disengagement became a principal object of concern and enhancement for many educational practitioners. Despite the resiliency, most students in higher education faced a major issue—being disconnected from the established connection in e-learning. The university context in the e-learning platform might be a challenging space for teachers to revitalize and strengthen engagement, yet it appears to be the avenue where meaningful learning experiences can take place. The present study explored the educational strategy that can effectuate positive impacts on student engagement. Thereupon, this project was conducted to design and evaluate the effectiveness of exit tickets as formative assessments in virtual classroom premises, specifically aimed to be implemented in synchronous sessions.

After the six-week intervention practice, this study has shown that digital exit tickets yielded statistically favorable effects on student engagement. With that said, it can be summarized that digital exit tickets helped students to review, identify core points, engage in deeper processing of the lectures as well as strengthen prior and new knowledge and establish connections between them, all pointing to the idea of digital exit tickets enhancing students' understanding. Following this, the said instructional strategy reinforced students' motivation by developing them to become intellectually curious, task-focused, responsible, and confident in responding or sharing their thoughts in class. Digital exit tickets also enhanced students' communication with the teacher as they can convey their difficulties, misconceptions,

questions, clarifications, and feedback. This intervention has involved students in the learning process, allowing them to reflect and assess their performance; voice their opinions; generate new ideas; and participate in class. Finally, having the weekly student feedback, it is evident that students have a positive reception of the added activity in their synchronous sessions.

These findings suggest that teachers can maximize the use of formative assessment strategies in college virtual classrooms. Although they are ungraded, they build students' investment in learning. Moreover, the teacher must take necessary measures to effectively use the data collected from the exit tickets. The substance of students' self-reported information must never be undermined. In general, opportunities brought by the intervention manifested the potential of exit tickets in producing new, enriching educational experiences.

# 5.3 Implication for Practice or Next Cycle

The researchers believe that the results of the study provided evidence of positive effects on student engagement brought forth by the use of exit tickets in virtual higher education classrooms. While this is true and serves as an opportunity for universities to practically apply the strategy, several challenges arose and certain actions must be considered by teachers who are interested in using this intervention.

At the onset of the implementation, the students under study were unfamiliar with the formative assessment strategy as their clarifying queries needing to be addressed became evident. Given that, teachers must explain the activity's purpose and instructions with clarity. If not introduced properly, students might display reluctance to do it. Another subject in check is the content of the exit ticket. There is a need to ensure a variation of questions or incorporation of practice questions in assessing students' understanding. The information collected from the exit tickets must be utilized effectively for the improvement of instruction. Before every learning session, teachers should highlight the main points from the exit ticket, continuously acknowledge the efforts of students, and communicate their progress based on their responses.

The intervention was employed over six weeks. Students' feedback on exit ticket experience would have been stronger if the strategy remained in classroom routines for a longer period of time. Students may even use their copy of responses for their future exams, reviews, and projects. Furthermore, teachers should explore and use other self-reported instruments to monitor student engagement during the intervention. The data derived from these measures may be used to make appropriate adjustments and generate enhancement activities.

Above all, at the heart of this action research is a need for the members of the school community as well as the readers to realize the significance of formative assessment, especially exit tickets in providing learning opportunities valuable for Vol. 6 Issue 7, July - 2022, Pages: 75-86

student engagement. Student engagement, by all means, is worthy to be measured, studied, and strengthened.

#### 6. RECOMMENDATIONS

The researchers were able to carry out the primary purposes of this project, present significant results, and put forward conclusions worthy of being reflected on. Still and all, the researchers would like to extend the following recommendations:

- Having understood the substance of exit tickets in college classrooms, teachers may implement or adapt the exit ticket intervention in their respective classrooms and different courses/subjects. Seeking, exploring, and utilizing other technological tools or media may also be taken into account.
- To the school community, educational practitioners, and anyone who aspires to study similar topics of interest, they may render relevant discoveries by delving into other factors/aspects of student engagement.
- Future researchers may consider exploring the lived experiences of college students who underwent the same intervention. They may also use the findings from this research project to strengthen their claims in their papers.

#### 7. REFERENCES

- [1] Abulhul, Z. (2021). Teaching Strategies for Enhancing Student's Learning. Journal of Practical Studies in Education, 2(3), 1-4. https://files.eric.ed.gov/fulltext/EJ1315486.pdf
- [2] Ali, A. (2021, May 17). Quantitative Research Tools. ResearchGate. https://www.researchgate.net/publication/351637842\_Quantitative\_Research\_Tools
- [3] Andrade, H. (2019). A Critical Review of Research on Student Self-Assessment. Frontiers in Education, 4(87), 1-13. https://www.frontiersin.org/articles/10.3389/feduc.2019. 00087/full
- [4] Arnab, R. (2017). Survey Sampling Theory and Applications. ScienceDirect. https://www.sciencedirect.com/topics/mathematics/complete-enumeration
- [5] Bartlebaugh, H. (2017, December 7). LEARNING FROM STUDENT VOICE: Are Students Engaged? Youth Truth Student Survey. http://youthtruthsurvey.org/wpcontent/uploads/2017/12/YouthTruth-Learning-from-Student-Voice-Student-Engagement.pdf
- [6] Basco, R. (2021). Exit Slips As Predictor of Academic Performance. ARASOF-Nasugbu Batangas, Philippines. https://journals.cspc.edu.ph/index.php/jemds/article/download/31/16
- [7] Berenson, M. (2017). Levels of Exit Slip Feedback in Secondary Mathematics [Doctoral Dissertation, Northern

- Illinois University]. https://commons.lib.niu.edu/bitstream/handle/10843/20770/Berenson\_niu\_0162D\_12930.pdf?sequence=1&isAllowed=v
- [8] Chang, B. (2019). Reflection in learning. Online Learning, 23(1), 95-110. https://files.eric.ed.gov/fulltext/EJ1210944.pdf
- [9] Chipchase, L., Davidson, M., Blackstock, F., Bye, R., Clothier, P., Klupp, N., Nickson, W., Turner, D., & Williams, M. (2017). Conceptualising and Measuring Student Disengagement in Higher Education: A Synthesis of the Literature. International Journal of Higher Education, 6(2), 31-42. https://files.eric.ed.gov/fulltext/EJ1134689.pdf
- [10] Dary, T., Pickeral, T., Shumer, R., & Williams, A. (2016). Weaving student engagement into the core practices of schools: A National Dropout Prevention Center/Network position paper. Clemson, SC: National Dropout Prevention Center/Network. https://dropoutprevention.org/wp-content/uploads/2016/09/student-engagement-2016-09.pdf
- [11] Department of Education and Training. (2021, September 23). Identify students at risk of disengaging. Victoria State Government. https://www.education.vic.gov.au/school/teachers/behaviour/engagement/Pages/identify-students.aspx
- [12] Farrell, O., & Brunton, J. (2020). A balancing act: a window into online student engagement experiences. International Journal of Educational Technology in Higher. 17(1), 1-19. doi:10.1186/s41239-020-00199-x
- [13] Fraser, J., Fahlman, D., Arscott, J., & Guillot, I. (2018).

  Pilot Testing for Feasibility in a Study of Student
  Retention and Attrition in Online Undergraduate
  Programs. International Review of Research in Open and
  Distributed Learning. 19 (1).

  https://files.eric.ed.gov/fulltext/EJ1174051.pdf
- [14] Haagenson, H., & Schlangen, C. (2016). Engaging All Students: Strategies to Promote Meaningful Learning and Increase Academic Performance. https://sophia.stkate.edu/maed/197
- [15] Isa, R., & Amirruddin, A. (2019). Survey on The Effectiveness of Exit Ticket Method in Improving Student's Focus and Understanding in Teaching and Learning for Course DFC2073 Programming Fundamental in Politeknik Muadzam Shah. MNNF Publisher. http://www.mnnfpublisher.com/uploads/4/6/9/3/469318 33/survey~1.pdf
- [16] Izor, K. (2019). The Effect of Exit Slips on Student Motivation within the Classroom. Honors College. https://scholarworks.bgsu.edu/cgi/viewcontent.cgi?article=1555&context=honorsprojects
- [17] Jain, S., & Angural, V. (2017). Use of Cronbach's Alpha in Dental Research. Medico Research Chronicles, 4(3),

- Vol. 6 Issue 7, July 2022, Pages: 75-86
  - 285-291. https://www.academia.edu/34520044/321\_USE\_OF\_C RONBACHS\_ALPHA\_.pdf
- [18] Kahu, E.., Picton, C., & Nelson, K. (2019). Pathways to engagement: A longitudinal study of the first-year student experience in the educational interface. Higher Education. https://doi.org/10.1007/s10734-019-00429-w
- [19] Kennedy, G. (2020, May). What is student engagement in online learning and how do I know when it is there?. (Discussion Paper). https://melbourne-cshe.unimelb.edu.au/\_\_data/assets/pdf\_file/0004/33621 25/student-engagement-online-learning\_final.pdf
- [20] Kiser, S. (2020). What is an Exit Ticket and How to Use Them. TeachHub. https://www.teachhub.com/classroom-management/2020/07/what-in-an-exit-ticket-and-how-to-use-them/
- [21] Lim, W. (2017). Improving student engagement in higher education through mobile-based interactive teaching model using socrative. 2017 IEEE Global Engineering Education Conference (EDUCON). https://ieeexplore.ieee.org/document/7942879
- [22] LoBue, A. (2020, August 5). Low-Bandwidth Teaching Strategies in Response to the COVID-19 Pandemic. The Education Redesign Lab. https://edredesign.org/files/edredesign/files/low\_bandwidth teaching strategies 2.pdf?m=1596823789
- [23] Loeb, S., Dynarski, S., McFarland, D., Morris, P., Reardon, S., & Reber, S. (2017). Descriptive analysis in education: A guide for researchers. (NCEE 2017–4023). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.
- [24] Maimaiti, G., Jia, C., & Hew, K. F. (2021). Student disengagement in web-based videoconferencing supported online learning: an activity theory perspective. Taylor and Francis Group. https://www.researchgate.net/publication/355120514\_St udent\_disengagement\_in\_web-based\_videoconferencing\_supported\_online\_learning\_a n\_activity\_theory\_perspective
- [25] Marzano, R. (2012). Art and Science of Teaching/The Many Uses of Exit Slips. Association for Supervision and Curriculum Development. https://www.ascd.org/el/articles/the-many-uses-of-exit-slips
- [26] Nyman, R. (2017). Interest and Engagement: Perspectives on Mathematics in the Classroom [Doctoral Thesis, University of Gothenburg]. https://gup.ub.gu.se/file/206800
- [27] Ozan, C., & Kincal, R. (2018). The Effects of Formative Assessment on Academic Achievement, Attitudes toward the Lesson, and Self-Regulation Skills. Educational Sciences: Theory & Practice, 8(1), 85-118. https://files.eric.ed.gov/fulltext/EJ1179831.pdf

- [28] Pandolpho, B. (2018, May 4). Putting Students in Charge of Their Learning. Edutopia. https://www.edutopia.org/article/putting-students-charge-their-learning
- [29] Paz-Albo, J. (2021). The Impact of Socrative Exit Tickets on Initial Teacher Training. DOI: https://doi.org/10.1080/87567555.2021.1971602
- [30] Paz-Albo, J., & Hervás, A. (2016). Exit tickets' effect on engagement in college classrooms. In L. Gómez, A. López, & I. Candel (Eds.), EDULEARN16. Proceedings of the 8th international conference on education and new learning technologies (pp. 5915-5918). Barcelona, Spain: IATED Academy.
- [31] Pimentel, J. (2010). A note on the usage of Likert Scaling for research data analysis. 109USM R & D 18(2): 109-112. https://www.researchgate.net/publication/331231816\_A \_note\_on\_the\_usage\_of\_Likert\_Scaling\_for\_research\_d ata\_analysis
- [32] Rickinson, M., Kunstler, B., & Salisbury, M. (2018).
  Insights for Early Action Research Project Literature Review. Melbourne. Regional Services Group, Department of Education and Training. https://www.academy.vic.gov.au/sites/default/files/2019-09/IfEA-Literature-Review-Final-17Sept2018.pdf
- [33] Sadler, P., & Sonnert, G. (2016). Understanding Misconceptions: Teaching and Learning in Middle School Physical Science. American Educator. https://files.eric.ed.gov/fulltext/EJ1094278.pdf
- [34] Sürücü, L., & Maşlakçı, A. (2020). Validity and Reliability in Quantitative Research. Business & Management Studies: An International Journal, 8(3), 2694-2726. https://www.researchgate.net/publication/344379869\_V alidity\_and\_Reliability\_in\_Quantitative\_Research
- [35] The Careers & Enterprise Company. (2016). Mapping disengagement. https://dera.ioe.ac.uk/32379/1/mapping\_disengagement\_research\_paper(2).pdf
- [36] Williams, A., Northcote, M., & Reddin, J. (2018). How are they going?: A project to monitor student engagement.

  https://digitalcommons.andrews.edu/cgi/viewcontent.cgi
  ?article=1014&context=adventist-learn-online
- [37] Wilson, S. (2017). Exploring the Importance of Using Formative Assessment in Informing Instruction to Improve Student Learning. NWCommons. https://nwcommons.nwciowa.edu/cgi/viewcontent.cgi?a rticle=1073&context=education masters