

Teaching Strategies on Online Modality among Physical Education Teachers in Enhancing Students' Performance

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Abstract

The purpose of this study is to determine the effectiveness of teaching strategies on online modality among physical education teachers in enhancing student's performance in Linga National High School. Descriptive method of research utilizing one hundred (100) learners who served as respondents in Linga National High School.

It sought to answer the following questions: the level of teaching strategies on Online Modality; the level of students performance in Physical education and effect between them.

Results showed that game-based approach was observed to have a significant positive effect to the performance of the students. On the other hand, Collaboration and Immediate Feedback were observed to have negative effects on the performance of the students as implied by the negative beta coefficients, which was not show any significance but should still be an area of concern. Lastly, although not significant, E-Assessment is observed to have a positive effect to the performance of the students.

From the findings above, the null hypothesis, "The teaching strategies on online modality among physical education teachers has no significant effect in enhancing Grade 8 student's performance in Linga National High School" is rejected. Thus, this calls for the acceptance of the alternative which incites that there is a significant effect.

Based on the findings of the study, the following conclusions were made. The respondents' reaction on the level of teaching effectiveness of games-based, collaboration, immediate feedback, and e-assessment were "Very High", "Very High", "Very High", and "Very High". The competency of the grade 8 students' performance in physical education in terms of the third quarterly grade was "Very Satisfactory".

It proves that teaching strategies on online modality among Physical Education Teachers has significant effect in enhancing Grade 8 students' performance in Linga National High School.

In view of the findings and conclusions of the study the following recommendations were given: (1) Since it was found out that teaching strategies on online modality in terms of Game based has significant effect in enhancing Grade 8 student's performance in Linga National High School. The researcher suggests that the teachers may engage students in game-based activities to enhance and inspire student to think critically and their ability to perform well academically. (2) It is also recommended for the students to aim for the best that will lead to their success. They may continue to strive hard with their studies and engage themselves in game-based activities sharpen critical thinking skills that they may also learn how to make decisions and let themselves develop through different activities. What is important is their inner drive that pushes them to study hard and excel in their academic performance in the educational institution. (3) Future researchers may use this study to further understand teaching strategies on online modality among Physical

Education Teachers in enhancing students' performance and achievements of the students.

Keywords: Teaching strategies; Game- based approach; Collaboration; Immediate feedback; and E-Assessment

1. Introduction

The entire world is currently facing an alarming Global Health situation resulting from the corona virus disease 2019 (COVID -19) pandemic, which has affected the daily lives of the people worldwide. Pandemic has also caused changes in educational environments, as public and private schools in the Philippines have begun to offer online classes. Despite the epidemic, schools are adapting to social changes by offering collaborative classes and developing new educational approaches.

Online Learning introduced in schools all over the country as the new platform of education. Technology-based teaching strategies used to facilitate faculty and students in learning process. It is used by the teachers in delivering quality education to the students despite the distance learning.

Success of students in accomplishing learning outcomes is determined by the teachers' use of appropriate teaching strategies, student-teacher interaction, and the quality of instruction, not by the curriculum's style, whether online or traditional. Excellent teaching strategies and effective communication are the most important factors in student achievement (Driscoll, Tichavsky, & Thompson et.al 2012)

In Physical Education Teachers face challenges in teaching Quality Physical Education due to a lack of effective teaching methods and teaching strategies used by the teacher in delivering the lesson. Most students are unmotivated and having problems in self-studying especially those students who do not have someone to assist them at home resulting to lack of clear and comprehensive understanding of the lesson written in the module or lesson posted online. Students in public schools have different level of understanding, high performing students can rely alone in their module while low performing students' needs supplementary and additional materials to understand the lesson.

There is a need for teachers to attend the needs for the students by giving them the safe place to learn online, using different approaches and teaching strategies for them to have better education.

Through this, a study of the of Teaching Strategies on Online Modality Among Physical Education Teachers in Enhancing Students Performance in Linga National High School, teachers used different teaching strategies for students who have problems in coping the new normal way of learning and to develop their performance at school.

Teaching strategies such as Game based approach, collaboration, immediate feedback, and E-Assessment to the effective teaching in delivering quality Physical education to the students in given situations.

Background of the Study

The usage of computer-based teaching strategies and instruction is revolutionizing the educational environment as more students seek online education. Schools across the country are debating the effectiveness of computer-based education and quickly deploying online classes to meet the learners needs. Schools adapted their curricula, implemented relevant technologies, developed learning and teaching methodologies and resources, built new teaching protocols, and revised their curricula. However, the effectiveness of online discussion and instruction is still being questioned in terms of student learning. Even though the current circumstances favor online education, there is still doubt its effectiveness.

Student performance is now being carefully considered when determining whether online education is a viable substitute for classroom teaching. Online learning is still being conducted and testing the effectiveness

of computer-assisted teaching based on student experience, and student performance is now being carefully considered when determining whether online education is a viable substitute for classroom teaching.

This study anchored in the DepEd RM NO. 207, S. 2021 which stated that the use of gamified teacher excels flexible learning course. It the challenge of quality in Basic Education, as stated in "Sama-Sama sa Pagsulong ng EduKalidad.". The SEAMEO INNOTECH has develop a curated gamified version of the text based TEACHeXCELS flexible learning course. That will encourage students in an innovative feature of a gamified learning course.

As teachers during this time, we face challenges in delivering quality physical education due to lack of innovative teaching strategies used by teachers. We are finding ways on how to adjust on the current situation by designing lessons that can access anytime. This will be beneficial in enhancing Grade 8 performance in physical education and teacher's workload. The researcher believes that through teaching strategies such as giving feedback, E-Assessment, and collaborative learning with the use of computer as its medium in online learning can be consider in developing the performance of the students in Physical Education specially when its 70 % performance task and with only 30 % written.

Providing effective feedback helps e-Learners get the most out of online materials and can have a significant impact on overall learner performance outcomes. When learning online, instant feedback allows the learner to analyze their progress and identify areas where they may improve. It promotes positive communication with teachers or other online students, as well as self-reflection and knowledge retention. Furthermore, well-designed E-Assessment systems link to significant improvements in student performance, which evaluate new educational goals and create positive development towards teaching and learning process. Along this line why this study was conducted, the researcher to able to determine the effectiveness of using different teaching strategies on online modality to enhance student's performance in Physical Education. The study would be beneficial to both learners and teachers to identify the suited teaching strategies in Physical Education in a new normal class set up.

Theoretical Framework

This study is framed within relevant theory that has significant bearings on this study.

In modular distance learning modality, some students have difficulty in answering activities. Teachers have more diversity and flexibility when it comes to teaching strategies, and instructional materials are more adaptable.

However, students will need more resources in adapting to the new normal class as they rely most on the internet, or computer based for information.

Teachers must use varieties of online teaching strategies to ensure that the internet's potential is appropriately utilized to support both their own and their students' learning.

The Anchored Instruction Theory emphasizes technology-based learning. Students take technology as the carrier, use the reality of the living world as the main content to discover problems, generate questions, and ultimately solve the problems.

This study is supported by Lev Semenovich Vygotsky's theory of constructivism which posits learning and development to be a collaborative activity and that children are cognitively developed in the context of socialization and education where children learn more when they have interaction, the exchange of ideas with peers or any people around drive them to think critically the interactions that provide them a chance to share their ideas. Likewise in Piaget's developmental theory explains that learning is based on discovery. According to his constructivist's theory, to provide an ideal learning environment, children should be allowed to construct knowledge that is meaningful for them. Continuous interaction among existing schemes,

assimilation, accommodation, and equilibrium creates new learning. Both Piaget and Vygotsky appreciated the essence of interaction, rather than accepting the information as presented through rote memory.

Connectivism is a relatively new learning theory proposes that students link their ideas, theories, and general knowledge in a productive way. It recognizes that technology is an important element of the learning process and that our constant connectivity allows us to make decisions about our education.

According to Van Gog (2018) studies showed that the effect of immediate feedback as it can help students deal with their problems as soon as possible giving the right type of feedback in the right place at the right time of the learning phase may be central in understanding how teachers can provide feedback in a systematic and productive way so that students can effectively interpret and incorporate it.

Connection and giving feedback with students are important on their progress in Physical education because lessons such as learning folk dances and sports are more technical and based on established rules, regulations, and origin.

This study is anchored on constructivism design by Jerome Bruner. It emphasizes exploration on discovery learning. (Sharp 2012) said that students play an active rather a passive role, and they work together to solve problem through cooperative learning activities. In teaching Physical Education teacher must use appropriate teaching strategies, resources and differentiated activities for the students to fully understand the lesson.

According to Aghlara & Tamjid (2014) a virtually enhanced world encourages the learners to use their imagination and discover new possibilities in a fun and interactive way. In Physical Education where the performance task is extremely important because students must create their own learning by conducting research, collaborating with peers, and utilizing technology to learn the lesson, particularly when learning different dances and sports.

The use of a game-based approach also aids in making learning more contextual, real, and thus more enjoyable and relevant to the students.

According to Samadi (2012), studies about the different learning styles started in the 1950s and in the early 1960s due to interest in the effect of the individual differences of learners in the learning process and to help the learners to cope up with the different teaching and learning process.

One of the famous learning styles models is Grasha-Riechmann Learning Styles Model. This model list integrates individual teaching and different learning styles and demonstrates how the stylistic qualities of teachers and learners can enhance the nature and quality of the learning experience.

As these theories point out, teaching strategies plays a vital role on online modality is an important part of student's academic success. Effective and planned teaching strategies and method may affect how the students perform in class.

Statement of the Problem

The purpose of this study aims to determine the effectiveness of teaching strategies on online modality among physical education teachers in enhancing grade 8 student's performance in Linga National High School.

Specifically, this study aims to answer the following questions:

1. What is the level of teaching strategies on Online Modality in terms of;
 - Game-based Approach
 - Collaboration;
 - Immediate Feedback; and
 - E-Assessment?
2. What is the level of student's performance in Physical Education in terms of Third Quarterly Grade?

3. Is there a significant effect between the teaching strategies on Online Modality and Students' Performance in Physical Education?

Research Methodology

The research design uses in this study was the descriptive research design to determine the if the teaching strategies on Online modality affect the Grade 8 students' performance on Physical education.

According to (Nassaji, 2015), descriptive research is the research design in which data is collected in a qualitative manner and analyzed using quantitative procedures. This research method is used for frequencies, averages, and other statistical calculations. Often the best approach prior to writing descriptive research, is conducting a survey investigation. The subject is being observed in a completely natural and unchanged natural environment. It is often used as a pre-cursor to quantitative research designs, the general overview giving some valuable pointers as to what variables are worth testing quantitatively.

Descriptive research aims at defining or giving a verbal portrayal or picture of a person, thing, event, group, situation, etc. This is liable to repeated research because its topic relates itself only to a certain period or a limited number of years. Based on the results of your descriptive studies about a subject, you develop the inclination of conducting further studies on such topic.

The respondents involved in this study are one hundred (100) Grade 8 students in sections Laguna, Manila, Tarlac, Cavite and Bulacan in Linga National High School.

This study conducted during the 3rd Grading Period and of Grade 8 students in Linga National High School. First the researchers defended the three chapters of the study. Then, the research instrument – instrument – researchers' self – made questionnaire are prepared and submitted for content validation by reputable experts in the field of the study.

The researcher sent letters to the School Divisions Superintendent, Dr. Marites A. Ibanez, Pila District Supervisor, Mrs. Florentina Rancap and Mrs. Erene SJ. Panopio, Principal II of Linga National High School to ask permission to the approval to conduct study on selected Grade 8 students in Linga National High School. After the content validation of the questionnaire, the number of the subject are consulted. The researchers' adviser and researcher instructors. The researchers' adviser suggested that the best number of the subjects that fits their study would be 100 individuals. Before gathering the data, the researcher conducted online class on 100 Grade 8 students in Linga National High School.

Instead of floating the questionnaire to the students using paper, google forms were used as a mode of answering the questionnaire. The result generated from the Google forms that were used to interpret the data.

Likert Rating Scale was used to determine the mean level of teaching strategies on online modality among Physical Education Teachers in enhancing Grade 8 students' performance in Linga National High School. The respondents answered these questionnaires – imperative to obtain the needed quantitative data. This research made use of close-ended questions, specifically Likert Rating scale questions to limit responses to be gathered within the scope of the study. The questionnaire is in the form of checklist and the responses were interpreted as Highly Effective, Effective, Moderately Effective, Less Effective and Not Effective. On the other hand, their grades in 3rd grading period were described as Outstanding, Very Satisfactory.

The data gathered in this study were presented and analyzed. The mean and standard deviation were used to get the level of the teaching strategies on online modality among Physical Education Teachers in Grade 8 students' performance in Linga National High School. It was used to test the hypothesis

The f-test was used to determine the effect of teaching strategies on online modality among Physical Education Teachers in enhancing students' performance. Weighted mean is used to find out the average responses of the respondents as measurement of the central tendency.

The F-test sums the predictive power of all independent variables and determines that it is unlikely that all the coefficients equal zero. However, it's possible that each variable isn't predictive enough on its own to be statistically significant. A Statistical F Test uses an F Statistic to compare two variances, s_1 and s_2 , by

dividing them. The result is always a positive number (because variances are always positive). F-test is used to know if there is a/no significant effect to the Grade 8 students' performance in Linga National High School.

Results and Discussion

Level of Teaching Effectiveness on Online Modality

Table 1. Level of Teaching Effectiveness on Online Modality in terms of Game-Based Approach

Statement	Mean	Standard Deviation	Remarks
1. Game- based learning provides excitement and fun while I am doing the activities.	4.67	0.53	Highly Effective
2. Games can motivate and/or encourage me to continue learning while playing.	4.74	0.48	Highly Effective
3. Can encourage me to collaborate with my other classmates while creating an environment of learning with experience.	4.72	0.49	Highly Effective
4. Keep me alert in the duration of the activity.	4.71	0.52	Highly Effective
5. Help me to be fast in strategic thinking and problem-solving.	4.77	0.45	Highly Effective

Overall Mean = 4.72

Standard Deviation = 0.50

Verbal Interpretation = Very High

Legend:

Scale	Range	Verbal Interpretation
5	4.21 – 5.00	Highly Effective
4	3.41 – 4.20	Effective
3	2.61 – 3.40	Moderately Effective
2	1.81 – 2.60	Less Effective
1	1.00 – 1.80	Not Effective

Table 1 illustrates level of teaching effectiveness on online modality in terms of Game-Based Approach. Among the statements above, **“Help me to be fast in strategic thinking and problem-solving”** yielded the highest mean score ($M=4.77$, $SD=0.45$) and was remarked as Highly Effective. This is followed by “Games can motivate and/or encourage me to continue learning while playing” with a mean score ($M=4.74$, $SD=0.48$) and was also remarked as Highly Effective. On the other hand, the statement “Game-based learning provides excitement and fun while I am doing the activities” received the lowest mean score of responses with ($M=4.67$, $SD=0.53$) yet was also remarked Highly Effective.

Overall, the level of teaching effectiveness on online modality in terms of Game-Based Approach attained a mean score of 4.72 and a standard deviation of 0.50 and was Very High among the respondents.

It was supported by the study of (Prensky 2017), Game-Based Learning was about enjoyment and activity engagement that promotes positive learning. Students can absorb knowledge without them knowing by simply integrating trend games, application online and offline that can be use anytime. This great innovation created by developers help students in enhancing their skill performance and increases academic

excellence. Game base learning provides interaction and participation that engage learners in an interactive type of teaching strategies and learning.

Table 2. Level of Teaching Effectiveness on Online Modality in terms of Collaboration

Statement	Mean	Standard Deviation	Remarks
1. Enables me to work with others confidently.	4.47	0.64	Highly Effective
2. Helps me to be responsible to finish the given task.	4.72	0.47	Highly Effective
3. It increases productivity, ideas, and creativity while collaborating with others.	4.76	0.43	Highly Effective
4. Allows me share ideas to others and builds on collective ideas.	4.67	0.57	Highly Effective
5. Boost my interest to be part of the activity while collaborating with others.	4.73	0.49	Highly Effective

Overall Mean = 4.67

Standard Deviation = 0.53

Verbal Interpretation = Very High

Legend:

Scale	Range	Verbal Interpretation
5	4.21 – 5.00	Highly Effective
4	3.41 – 4.20	Effective
3	2.61 – 3.40	Moderately Effective
2	1.81 – 2.60	Less Effective
1	1.00 – 1.80	Not Effective

Table 2 illustrates level of teaching effectiveness on online modality in terms of Collaboration. Among the statements above, “It increases productivity, ideas, and creativity while collaborating with others” yielded the highest mean score ($M=4.76$, $SD=0.43$) and was remarked as Highly Effective. This is followed by “Boost my interest to be part of the activity while collaborating with others” with a mean score ($M=4.73$, $SD=0.49$) and was also remarked as Highly confident. “Enables me to work with others confidently” received the lowest mean score of responses with ($M=4.47$, $SD=0.64$) yet was also remarked Highly Effective. On the other hand, the statement “Allows me share ideas to others and builds on collective ideas” received the lowest mean score of response with ($M=4.67$, $SD=0.57$) yet was also remarked Highly effective.

Overall, the level of teaching effectiveness on online modality in terms of Collaboration attained a mean score of 4.67 and a standard deviation of 0.53 was Very High among the respondents.

It implied that the result of the data gathered supported by the study of Gates (2018) According to his study, collaborative learning not only helps students acquire higher-level thinking abilities and performance,

but it also boosts their confidence and self-esteem. By showing the tactics and learning content, as well as enhancing social and intrapersonal abilities, performance can maximize the learning experience. By incorporating everyone in the group discussion and performance, students learn how to interact and participate with a variety of learners and build their leadership skills. Teacher collaboration positively impacts student achievement and allows us as educators to explore unfamiliar territory by creating positive relationship through collaboration of the learners to achieve their goals.

Table 3. Level of Teaching Effectiveness on Online Modality in terms of Immediate Feedback

Statement	Mean	Standard Deviation	Remarks
1. It allows me to address a problem straight away during performance.	4.57	0.64	Highly Effective
2. It makes me more motivated whenever I get positive immediate feedback.	4.69	0.51	Highly Effective
3. Immediate feedback helps me assess my progress in learning.	4.85	0.36	Highly Effective
4. It helps me to improve my output and performance in school.	4.77	0.45	Highly Effective
5. Immediate feedback boosts my self-esteem.	4.65	0.59	Highly Effective

Overall Mean = 4.71

Standard Deviation = 0.53

Verbal Interpretation = Very High

Legend:

Scale	Range	Verbal Interpretation
5	4.21 – 5.00	Highly Effective
4	3.41 – 4.20	Effective
3	2.61 – 3.40	Moderately Effective
2	1.81 – 2.60	Less Effective
1	1.00 – 1.80	Not Effective

Table 3 illustrates level of teaching effectiveness on online modality in terms of Immediate Feedback. Among the statements above, “Immediate feedback helps me assess my progress in learning” yielded the highest mean score ($M=4.85$, $SD=0.36$) and was remarked as Highly Effective. This is followed by “It helps me to improve my output and performance in school” with a mean score ($M=4.77$, $SD=0.45$) and was also remarked as Highly Effective. On the other hand, the statement “It allows me to address a problem straight away during performance” received the lowest mean score of responses with ($M=4.57$, $SD=0.64$) yet was also remarked Highly Effective.

The level of teaching effectiveness on online modality in terms of Immediate Feedback attained an overall mean score of 4.71 and a standard deviation of 0.53 and was Very High among the respondents. The finding relates to the study of Markovic (2021) that immediate response in students' performance, discussion and works are more effective and provide deeper knowledge about the discussion. The more clarifications, corrections and consistently the teacher provide feedback, the better the output. Teachers must follow up learning with immediate feedback, it causes learners to pause, engage, and realize the correct and wrong part of the output. Giving feedback immediately significantly makes learning an active rather than passive experience

Table 4. Level of Teaching Effectiveness on Online Modality in terms of E-Assessment

Statement	Mean	Standard Deviation	Remarks
1. It provides timely results and feedback.	4.63	0.54	Highly Effective
2. It helps me look back on the correct and wrong answers in the assessment.	4.73	0.49	Highly Effective
3. It provides any time accessing the e-assessment materials.	4.81	0.39	Highly Effective
4. It provides unlimited access to knowledge and information.	4.68	0.53	Highly Effective
5. It provides excitement and fun while doing the activities.	4.71	0.48	Highly Effective

Overall Mean = 4.71

Standard Deviation = 0.49

Verbal Interpretation = Very High

Legend:

Scale	Range	Verbal Interpretation
5	4.21 – 5.00	Highly Effective
4	3.41 – 4.20	Effective
3	2.61 – 3.40	Moderately Effective
2	1.81 – 2.60	Less Effective
1	1.00 – 1.80	Not Effective

Table 4 illustrates level of teaching effectiveness on online modality in terms of E-Assessment. Among the statements above, "It provides any time accessing the e-assessment materials" yielded the highest mean score ($M=4.81$, $SD=0.39$) and was remarked as Highly Effective.

This is followed by "It helps me look back on the correct and wrong answers in the assessment" with a mean score ($M=4.73$, $SD=0.49$) and was also remarked as Highly Effective.

On the other hand, the statement "It provides timely results and feedback" received the lowest mean

score of responses with ($M=4.63$, $SD=0.54$) yet was also remarked Highly Effective.

On the level of teaching effectiveness on online modality in terms of E-Assessment obtained an overall mean score of 4.71 and a standard deviation of 0.49 and was Very High among the respondents.

The result was supported by the research Ferrão (2013), and (Gikandi et al. 2013) they believed that the students become the major focus of the teaching and learning process in terms of structuring learning methodologies, teaching time, interaction time, and evaluation approaches.

One successful strategy for establishing a student-centered educational paradigm is E-assessment, which can be a basic component for effective learning. It believed that E-assessment-centered teaching and learning procedures give learners with opportunities to demonstrate their skill improvement and get help to improve their learning.

Level of Competency of Grade 8 Students' Performance in Physical Education in terms of Third Quarterly Grade

Table 5 presents the level of competency of the grade 8 students' performance in physical education in terms of the third quarterly grade. Out of one hundred (100) respondents, forty-nine (49) respondents were able to obtain grades between 85-89 which was very satisfactory. This is followed in frequency by those who had performed on an outstanding level with 39% of the population or about thirty-nine (39) students obtaining such grades of 90-100. The remaining twelve (12) students or 12% of the population garnered grades between 80-84 which was satisfactory.

Table 5. Level of Grade 8 Students' Performance in Physical Education in terms of Third Quarterly Grade

Grade	3 rd Quarter		Remarks
	Frequency(f)	Percentage%	
90-100	39	39%	Outstanding
85-89	49	49%	Very Satisfactory
80-84	12	12%	Satisfactory
75-79	0	0%	Fairly Satisfactory
Below 75	0	0%	Did Not Meet Expectations
Total	100	100%	
Overall Mean	88.58		

Standard Deviation**3.89****Verbal
Interpretation****Very Satisfactory**

Overall, the competency of the grade 8 students' performance in physical education in terms of the third quarterly grade was very satisfactory as suggested by the mean performance of 88.58 with the standard deviation 3.89.

As supported by the research conducted by Daluba (2013) stated that to achieve a higher scholastic performance, the integration of different teaching strategies and engaging student-centered approach, instead of depending on the traditional approach like lecture method. His research shows that there is was statistically significant. relationship between teaching method and scholastic performance of students

**Significant Effect of Teaching Strategies on the Performance of Grade 8 Students on Online Modality
in Linga National High School**

Table 6 presents the significant effect of the teaching strategies on the performance of grade 8 students on the online modality in Linga National High School. Specifically, it presents the effect of the Game-Based Approach, Collaboration, Immediate Feedback, and E-Assessment on the 3rd Quarterly Grade of the students.

**Table 6. Significant Effect of Teaching Strategies on the Performance of
Grade 8 students on online Modality in Linga National High
School**

Teaching Strategies	Grade	Beta Coefficient	F-value	P-value	Analysis
Game-Based Approach	3 rd Quarter Grade	0.789	2.601	0.020	Significant
Collaboration		-0.392		0.168	Not Significant
Immediate Feedback		-0.009		0.977	Not Significant
E-Assessment		0.531		0.081	Not Significant

Game Based Approach was observed to have a significant positive effect to the performance of the students as suggested by the beta coefficient 0.789. The significance of which was attributed to the obtained p-value of 0.020 which is less than the significance alpha of 0.05.

On the other hand, Collaboration and Immediate Feedback were observed to have negative effects on the performance of the student as implied by negative beta coefficients, which was not show any significance relative to the p-values greater than 0.05 but should still be an area of concern.

Lastly, although not significant, E-Assessment is observed to have a positive effect to the performance of the students.

From the findings above, it can be inferred that at 0.05 level of significance, the null hypothesis, "The teaching strategies on online modality among physical education teachers has no significant effect in enhancing Grade 8 student's performance in Linga National High School" is rejected. Thus, this calls for the acceptance of the alternative which incites that there is a significant effect.

It was supported by the study of Prensky (2017), stated that Game-Based Learning was about enjoyment and activity engagement that promotes positive learning. Game base learning provides interaction and participation that engage learners in an interactive type of teaching strategies and learning

According to Stronge (2017), depending on the task goals, teamwork can produce a wide range of

learning outcomes. Teachers must exercise must be careful and considerate to the needs and abilities of the students to avoid forming unsuccessful student groups. Ability grouping without differentiated supports, materials, tasks, and strategies has been demonstrated to be more damaging to low-ability groups than beneficial.

Ferguson (2016) said that feedback seen as a critical component in assisting students' growth as independent learners who can monitor, analyze, and manage their own progress and development. This considered as a method of encouraging learners to make use of the comments and feedback they have received. Students should not be discouraged by feedback at any cost.

Research conducted by Marckovic (2021) imply that effective teachers build their feedback around their knowledge of their students' responses. Even in mathematical contexts, teachers should carefully examine student responses since they may not completely reflect what they intended to say. They stress the necessity of reflecting on the learning orientation that the student has created because of the teacher's input. Focusing feedback on grades, marks, judgments, or competition could make a negative impact on the student's learning orientation. Marckovic (2021) are concerned that such a negative attitude will hinder students' educational success and performance.

The result was supported by Khuraibah (2015) According to his findings, the degree of anxiety associated with E assessment testing in female students, as well as the degree of verification of the trend toward E assessment, varies depending on both achievement which are high and poor and optional preferences like e-assessment and written test. According to the findings, there are discrepancies in average grades between students who prefer E-assessment and students who prefer paper-and-pencil testing through emotional, cognitive, and behavioral components for the electronic test.

Summary Findings

1. Game-Based Approach attained a mean score of 4.72 and a standard deviation of 0.50 and was "Very High"; level of teaching effectiveness on online modality in terms of Collaboration attained a mean score of 4.67 and a standard deviation of 0.53 and was "Very High"; level of teaching effectiveness of Immediate Feedback attained a mean score of 4.71 and a standard deviation of 0.53 and was "Very High"; Lastly, E-Assessment attained a mean score of 4.71 and a standard deviation of 0.49 and was "Very High"

2. The level of the grade 8 students' performance in physical education in terms of the third quarterly grade was "Very Satisfactory" as suggested by the mean performance of 88.58 with the standard deviation 3.89.

3. Significant effect of teaching strategies on the performance of grade 8 students in online modality in Linga National High School, Game-Based Approach was observed to have a significant positive effect to the performance of the students as suggested by the beta coefficient 0.789. The significance of which was attributed to the obtained p-value of 0.020 which is less than the significance alpha of 0.05.

On the other hand, Collaboration and Immediate Feedback were observed to have negative effects on the performance of the students as implied by the negative beta coefficients, which was not show any significance relative to the p-values greater than 0.05 but should still be an area of concern.

Lastly, although not significant, E-Assessment is observed to have a positive effect to the performance of the students.

Conclusions

Based on the findings of the study, the following conclusions were made.

1. The respondents' reaction on the level of teaching effectiveness of games-based, collaboration, immediate feedback, and e-assessment were "Very High", "Very High", "Very High", and "Very High". The competency of the grade 8 students' performance in physical education in terms of the third quarterly grade was "Very Satisfactory". It proves that teaching strategies on online modality among Physical Education Teachers has significant effect in enhancing Grade 8 students'

performance in Linga National High School.

2. Therefore, the null hypothesis, “The teaching strategies on online modality among physical education teachers has no significant effect in enhancing Grade 8 student’s performance in Linga National High School” is rejected. Thus, this calls for the acceptance of the alternative which incites that there is a significant effect.

Recommendations

Based on the conclusions drawn from the study, the following were recommended:

1. Since it was found out that teaching strategies on online modality in terms of Game based has significant effect in enhancing Grade 8 student’s performance in Linga National High School. The researcher suggests that the teachers may engage students in game-based activities to enhance and inspire student to think critically and their ability to perform well academically.
2. Though Statistically, Collaboration and Immediate feedback has no significant effect in enhancing Grade 8 student’s performance in Linga National High School. The research showed that these two variables were highly effective as a teaching strategy. Thus, the researcher suggest teachers and school administrators can elaborate and do further consultations about the academic preference of the students.
3. It is also recommended for the students to aim for the best that will lead to their success. They may continue to strive hard with their studies and engage themselves in game-based activities sharpen critical thinking skills that they may also learn how to make decisions and let themselves develop through different activities. What is important is their inner drive that pushes them to study hard and excel in their academic performance in the educational institution.
4. Future researchers, may use this study to further understand teaching strategies on online modality among Physical Education Teachers in enhancing students’ performance and achievements of the students. They could also integrate diverse tactics in the attainment of the relevant information from their respondents. This study can be relevant for additional research.

REFERENCES

- Abuhassna, H., Megat, A., Yahaya, N., Azlina, M., & Al-rahmi, W. M. (2020). Examining Students satisfaction and learning autonomy through web-based courses. *International Journal of Advanced Trends in Computer Science and Engineering*, 1(9),356370. <https://doi.org/10.30534/ijatcse/2020/53912020>
- Aghlara, L. and Tamjid, N.H. (2014) The Effect of Digital Games on Iranian Children Vocabulary Retention Foreign Language Acquisition. *Procedia-Social and Behavioral Sciences*, 29, 552-560. <http://dx.doi.org/10.1016/j.sbspro.2014.11.275>
- Akilli, G. K. (2017). Games and simulations: A new approach in education? In D. G Gibson, C. A. Aldrich, & M. Prensky (Eds.), *Games and simulations in online learning: Research and development frameworks* (pp.1-20). Hershey, PA: Information Science Publishing.
- Akubue, F.N., (2018). Some Strategies in Effective Teaching with Particular assessment approach for evaluation in engineering overcrowdedgroups. *Computers and Education*, 59, 732–740.
- Allen, I. E., Seaman, J., Poulin, R., & Straut, T. T. (2016). Online report card:Tracking online education in the United States. Babson survey research group and the online learning consortium (OLC), Pearson, and WCET state authorization Network.

- Alyahya Dalia & Nada Almutairi (2019) The Impact of Electronic Tests on Students' Performance Assessment [https://www. The Impact of Electronic Tests /blog/parents-and-teachers/education/immediate-feedback/](https://www.TheImpactofElectronicTests.com/blog/parents-and-teachers/education/immediate-feedback/)
- Arkorful and Abaidoo (2015) International Journal Of Instructional Technology And Distance Learning January 2015 Volume 12 Number 1 ISSN 1550-6908
- Aubin (2019) The Importance of Immediate Feedback in Learning in Students
Error! Hyperlink reference not valid.[teachers/education/immediate-feedback/](https://www.TheImpactofElectronicTests.com/blog/parents-and-teachers/education/immediate-feedback/)
- Beaumont C, O'Doherty M, Shannon L (2012) Reconceptualising assessment feedback: a key to improving student learning? *Studies Higher Educ* 36(6):4671–4687
- Beck, V. S. (2015). Comparing online and face-to-face teaching and learning.
- Becker, K. (2017). Digital game-based learning once removed: teaching teachers. *British Journal of Educational Technology*, 38(3), 478–488.
- Borko, H. et.al (2014). Professional development and teacher learning: mapping the terrain. *Educ. Res.* 33, 3–15. doi: 10.3102/0013189X033008003
- Borokhovski, E., Tamim, R. M., Bernard, R. M., Abrami, P. C., & Sokolovskaya, A. (2012). Are contextual and design student-student interaction treatments equally effective in distance education? A follow-up meta-analysis of comparative empirical studies. *Distance Education*, 33(3), 311-329
- Boud, D. Molly R. (2013). Assessment and learning: Contradictory or complementary. In P. Knight (Ed.), *Assessment for learning in higher education*, (pp. 35-48). Kogan Page.,
- Broadbent, J. (2017). Comparing online and blended learner's self-regulated learning strategies and academic performance. *The Internet and Higher Education*, 33, 24-32. <https://doi.org/10.1016/j.iheduc.2017.01.004>
- Carless D, Salter D, Yang M, Lam J (2014) Developing sustainable feedback practices. *Stud High Educ* 36(4):395–407
- Cicchino, M. I. (2015). Using game-based learning to foster critical thinking computer Interaction. New York: John Wiley & Sons. games on mathematics achievement and class motivation. *Computers and Education*, 55(2), 427- 443.
- Chatti, M. A., Hamdan, N. A., & Schaper, H. (2012). Collaboration in e-learning
- Chaturvedi, S., and Pasipanodya, T. E. (2021). A Perspective on Reprioritizing Children's Wellbeing amidst COVID-19: Implications for Policymakers and Caregivers. *Front. Hum. Dyn.* 2, 18. doi:10.3389/fhumd.2020.615865
- Chesney, D. (2013). asee/ieee Frontiers in Education Conference. Boulder, CO

- Chiong, R., & Jovanonic, J. 2012. Collaborative learning in online study groups: An evolutionary game theory perspective. *Journal of Information Technology Education: Research*, 11, 81-101.
- Clements, M. D., & Cord, B. A. (2013). Assessment guiding learning: collaborative writing in an online learning environment. *Distance Educ* 34(3):324–338
- Daluba, N.E. 2013. Effect of Demonstration Method of Teaching on Students' Achievement in Agricultural Science. *World Journal of Education*, 36,1-7
developing graduate qualities in an experiential learning programme. *Assessment and Evaluation in Higher Education*, 38(1), 114–124.
- Di Meo, F., & Martí-Ballester, C.-P. (2020). Effects of the perceptions of online quizzes and electronic devices on student performance. *Australasian Journal of Educational Technology*, 36(1), 111–125. <https://doi.org/10.14742/ajet.488>
- De-Marcos, L., Garcia-Cabot, A., and Garcia-Lopez, E. (2017). Towards the social gamification of e-learning: a practical experiment. *Int. J. Eng. Educ.* 33, 66–73.)
- Dumova, T. (2012). The usability of online quizzes: Evaluating student perceptions. In S. Kelsey, & K. St. Amant (Eds.), *Computermediated communication: Issues and approaches in education* (pp. 50–61). Hershey, PA: IGI Global.
- Djamarah, S.B., & Zain, A. (2012). *Strategi Belajar Mengajar*. Cetakan keempat. Jakarta. Indonesia: Rineka Cipta. <https://doi.org/10.1007/s10639-020-10396-w>
- Driscoll, A., Tichavsky, L., & Thompson, G. (2012). Can online courses deliver in-class results? A comparison of student performance and satisfaction in an online versus a face-to-face introductory sociology course. *Teaching Sociology*, 40(4), 312-331.
- Effandi and Iksan (2017) THE EFFECTS OF TEACHING METHODS ON STUDENTS' ACADEMIC PERFORMANCE IN THE BUEA MUNICIPALITY. <https://project-house.net/the-effects-of-teaching-methods-on-students-academic-performance-in-the-buea-municipality/>
- Elmehdi Hussein & Al-Mehdi Ibrahim (2019) Online Summative Assessment and Its Impact on Students' Academic Performance, Perception and Attitude Towards Online Exams: University of Sharjah Study Case https://link.springer.com/chapter/10.1007/978-3-03001662-3_24
- El Said, G. R. (2021). How did the COVID-19 pandemic affect higher education learning experience? an empirical investigation of learners' academic performance at a university in a developing country. *Advances in Human-Computer Interaction*, 2021, 1-10. <https://doi.org/10.1155/2021/6649524>
- Eltahir, M.E., Alsalhi, N.R., Al-Qatawneh, S., AlQudah, H.A., & Jaradat, M.

- (2021). The impact of game-ased learning GBL) on students' motivation, engagement and academic performance on an Arabic language grammar course in higher education. *Educ Inf Technol*, 26, 3251-3278. <https://doi.org/10.1007/s10639-020-10396-w>
- Li J. (2013). A case study on the effect of teachers' written feedback in English writing teaching. *Foreign Language Circles*, 87-96. <https://doi.org/CNKI:SUN:WYJY.0.2013-02-012>
- Liua & Chena (2013) The Effect of Game-Based Exploratory Study In Singapo
[re.https://www.researchgate.net/publication/37160621_The_Impact_Of_Immediate_Feedback_On_Student_Performance_An_Exploratory_Study_In_Singapore](https://www.researchgate.net/publication/37160621_The_Impact_Of_Immediate_Feedback_On_Student_Performance_An_Exploratory_Study_In_Singapore)
- Ferguson, P. (2016). Student perceptions of quality feedback in teacher education. *Assessment & Evaluation in Higher Education*, 36(1), 51-62.
- Ferrão M (2013) E-assessment within the Bologna paradigm: evidence from Portugal. *Assessment Evaluation Higher Educ* 35(7):819–830
- Ferris, D et.al (2014). Written corrective feedback in second language acquisition and writing studies. *Language Teaching*, 45.4,446-459. Doi: 10.1017/s0261444812000250
- Ganyaupfu M. E. (2013). Teaching Strategies and Students' Academic Performance. *International Journal of Humanities and Social Science Invention*, 2(9), 29–35
- Gates Sabrina (2018) Benefits of Collaboration
<https://www.nea.org/professional-excellence/student-engagement/tools-tips/benefits-collaboration>
- Gikandi JW, Morrowa D, Davis NE (2013) Online formative assessment in higher education: A review of the literature. *Comput Educ* 57:2333–2351
- Gilbert, B., 2015. Online learning revealing the benefits and challenges. *Education Masters*. Paper 303, St. John Fisher College, New York
- Goddard, Y. L., Goddard, R. D., and Tschannen-Moran, M. (2017). A theoretical and empirical investigation of teacher collaboration for schoolimprovement and student achievement in public elementaryschools. *Teach. Coll. Rec.* 109, 877–896.
- Grasha, A. F. (1996). *Teaching with Style: A Practical Guide to Enhancing Learning by Understanding Teaching and Learning Styles*. Pittsburgh, PA:Alliance Publishers.
- Guasch T, Espasa A, Alvarez IM, Kirschner PA (2013) Effects of Feedback
- Halpin, P., von Davier, A., Hao, J., & Liu, L. (2017). Measuring Student student Engagement engagement During during Collaborationcollaboration. *Journal Of of Educational Measurement*, 54(1), 70-84. doi: 10.1111/jedm.12133
- Harasim 2021 *Learning theory and online technologies*, New York Taylor & Francis 107 (8), 1788-1813
- Hurlbut, A. R. (2018). Online vs. traditional learning in teacher education: A

comparison of student progress. *The American Journal of Distance Education*, 32(4), 248-266.
<https://doi.org/10.1080/08923647.2018.1509265>

Hsu, S. (2017). Who assigns the most ICT activities? Examining the relationship between teacher and student usage. *Computers & Education*, 56(3), 847-855

Jenkins, D. M. (2015). Integrated course design: A facelift for college courses. *Journal of Management Education*, 39(3), 427-432.

Jonsson, A., & Panadero, E. (2018). Facilitating students' active engagement with feedback. In A. A. Lipnevich & J. K. Smith (Eds.), *The Cambridge handbook of instructional feedback*. Cambridge University

JG Mora-Ruano (2019) Does Teacher Collaboration Improve Student Achievement? Analysis of the German PISA 2012 Sample
<https://www.frontiersin.org/articles/10.3389/feduc.2019.00085/full>

Kebritchi, M., Hirumi, A., & Bai, H. (2016). The effects of modern math computer
https://resourced.prometheanworld.com/collaborative-learningstudents/https://sc.edu/about/offices_and_divisions/cte/graduate_teaching_assistants/index.php

Kemp, N., and Grieve, R. (2014). Face-to-Face or face-to-screen? Undergraduates' opinions and test performance in classroom vs. online learning. *Front. Psychol.* 5:1278. doi: 10.3389/fpsyg.2014.01278

Koivisto, J., and Hamari, J. (2019). The Rise of Motivational Information Systems: A Review of Gamification Research. *Int. J. Inf. Manag.* 45, 191-210. doi:10.1016/J.IJINFOMGT.2018.10.013

King, S. B. (2014). Graduate student perceptions of the use of online course tools to support engagement. *International Journal for the Scholarship of Teaching and Learning*, 8(1). doi:10.20429/ijsoitl.2014.080105

Kuh, G. D., Jankowski, N., Ikenberry, S. O., & Kinzie, J. (2014). *Knowing What Students Know and Can Do: The Current State of Student Learning Outcomes Assessment in US Colleges and Universities*. Urbana: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA).

Khuraibah, I. M. S. (2015). The concern of the electronic test and the direction towards it in the light of both academic achievement and test preference among students of the Department of Psychology Faculty of Education. *Journal of the Faculty of Education, Al-Azhar University*, 162.

Lai, E. R. (2017). Collaboration: A Literature Review (Rep.). Retrieved from Pearson website: <http://www.pearsonassessments.com/research>

- Lau, C. Y., & Shaikh, J. M. (2012). The impacts of personal qualities on online learning readiness at Curtin Sarawak Malaysia (CSM). *Educational Research and Reviews*, 7(20), 430–444.
- Lear, J. L., Ansorge, C., & Steckelberg, A. (2014). Interactivity/community process model for the online education environment. *Journal of Online Learning and Teaching*, 6(1), 71– 77.
- Leung, S., & Kim, H. (2014). Effect of the presence and difficulty of task on strategy use: An exploratory study. *International Review of Applied Linguistics*, 42, 1-47.
- Liang, C., Lee, Y.-Z., & Chou, W.-S., 2012. The Design Consideration for Game-Based Learning, *Educational Technology*, 50(2), (pp 25-28).link.springer.com/chapter/10.1007/978-3-030-52240-7_48
- Maloney, N. G. (2017). Collaboration structure, communication media, and problems in scientific work. *Journal of Computer-Mediated instruction Communication*, 12 (2), 712–732. Available from <http://dx.doi.org/10.1111>
- Mammam, Badar, and Bala, T. 2020. The impact of teaching methods on academic performance of secondary school students in Nigeria. *International Journal of Development Research*, Vol. 10, Issue, 06, pp. 37382-37385.
- Markovic Isadora (2021) Why Giving Instant Feedback is Important for Effective Learning <https://edume.com/blog/role-of-feedback-in-improving-learning>
- Mazur E. (2013) The Effect of Peer Instruction Method on Pre-Service
- Means, B., Toyama, Y., Murphy, R., and Baki, M. (2013). The Effectiveness of Learning on Students' Learning Performance in Science Learning – Case of "Conveyance Go" <https://core.ac.uk/download/pdf/81980848.pdf> learning seminar. Proceedings of the Mobile Learning Computer Supported Learning Research Group Conference (CALRG 2013). The Open University, United Kingdom.
- Michael, D., & Chen, S. (2016). *Serious games: Games that educate, train, and inform*. Boston: Thomson Course Technology PTR.
- Mueller (2014). Teachers' Conceptual Comprehension of Methodology Course <https://eric.ed.gov/?id=EJ1139265> teaching. Manila, Lorimar Publishing, INC.
- Murtagh, L. (2014). The motivational paradox of feedback: Teacher and student perceptions. *The curriculum journal*, 25(4), 516-541. <https://doi.org/10.1080/09585176.2014.944197>
- Narciss, S. & Huth, K. (2016). Fostering achievement and motivation with bug-related tutoring feedback in a computer-based training for written subtraction. *Learning and Instruction*, 16, 4, 310–322

- Nassaji, H. (2015) 'Qualitative and descriptive research: Data type versus data analysis', *Language Teaching Research*, 19(2).
 Online and Blended Learning: A Meta-Analysis of the Empirical Literature. *Teach. Coll. Rec.* 115 (3), 1–47.
- Oh, J. & Won Hur, J. (2012) Learning, Engagement, and Technology: Middle School Students' Three-Year Experience In Pervasive Technology Environments In South Korea. *Educational Computing Research*. 46 (3), 295-312.
- Pei, L., & Wu, H. (2019). Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-analysis. *Medical Education Online*, 24(1), 1666538.
- Sharp, H. (2012). Interaction Design: Beyond Human-computer Interaction
<https://arl.human.cornell.edu/879Readings/Interaction%20Design%20-%20Beyond%20Human-Computer%20Interaction.pdf>
- Prensky, M., 2017 . Digital natives, digital immigrants' part 1. On the horizon, 9(5), pp.1-6.
- Promethean (2019) Collaborative learning: how can it help your students?
<https://resourced.prometheanworld.com/collaborative-learning-students/>
- Qudsyi, I., Herawaty., Saifullah., Khaliq., & Setiawan. (2014). Pengaruh Metode Pembelajaran Kooperatif (Cooperative Learning) dan Motivasi Belajar terhadap Prestasi Belajar Siswa SMA. Available at:<http://journal.unissula.ac.id/proyeksi/article/view/106>References to social studies. *The Journal of Education Research*, 14(2)
- Raspopovic, M., Cvetanovic, S., Medan, I., and Ljubojevic, D., (2017). The effects of integrating social learning environment with online learning. *The International Review of Research in Open and Distributed Learning*, 18(1), pp. 141-160.
- Royal, A. P.(2014). Blended learning and sense of community: a comparative analysis with traditional and fully online graduate courses. *Int. Rev. Res. Open Dist. Learn.* 5. doi: 10.29173/irrodl.v5i2.192
- Samadi, M. (2012). Evaluation of the Psychometric Properties of the
 Questionnaire of Learning Style of Felder Solomonin Pre-High Schoolgirls. *Educational Modern Approaches of Educational and Psychological Sciences*, 13(1),39–60.
- Song, N., Khlaisang, J., Puthaseranee, B., and Likhithamrongkiat, M., (2018). E-learning system to enhance cognitive skills for learners in higher education. *Procedia-Social and Behavioral Sciences*, 174, pp. 667-673.
- Singh (2019) The Impact of Online Assessment on The Educational Sector
<https://elearningindustry.com/online-assessment-on-the-educational-sector-impact>

- Smartick (2019) The Importance of Immediate Feedback in Learning
<https://www.smartick.com/blog/education/pedagogy/immediate-feedback/UofSC> COVID-19
 Campus Safety Status: New Normal
- Shute, V. J. (2018). Focus on formative feedback. *Review of Educational Research*, 78(1), 153- 189. <https://doi.org/10.3102/0034654307313795>
- Shrum, W. (2017). Does the internet promote collaboration and productivity?
 evidence from the scientific community in asia
https://www.researchgate.net/publication/220438025_Does_the_Internet_Promote_Collaboration_and_Productivity_Evidence_from_the_Scientific_Community_in_South_Africa
- Stronge, J.H. (2017). *Qualities of effective teachers* (2nd ed.). Alexandria, VI: ASCD. Twin Cities Public Television. (2013). *SciGirls seven: How to engage girls in STEM*. St. Paul, MN: Author. Retrieved from: <http://www.scigirlsconnect.org/scigirls>
- Stuart (2012) The Impact of Immediate Feedback On Student Performance: An student discourse. *Interdisciplinary Journal of Problem-Based Learning*, 9(2). doi: 10.7771/1541-5015.1481
- Trybus (2016), Jessica. "Game-Based Learning: What It Is, Why It Works, and Where It's Going." *New Media*. New Media Institute, n.d. Web. 21 Oct. 2016
<https://epublications.regis.edu/cgi/viewcontent.cgi?article=1815&context=theses>
- Urquhart, C. & Urquhart, V. (2012) Generation Z, Meet Cooperative Learning. *Middle Online Collaborative Learning 33 School Journal*. March
https://www.academia.edu/43063685/Generation_Z_Meet_Cooperative_Learning
- Van Gog, T. (2018). Content and timing of feedback in a web-based learning environment: effects on learning as a function of prior knowledge. *Interactive Learning Environments*, 16(2), 183-193.
- Wiggins B.E (2016) *International Journal of Game-Based Learning* 6(1):18-29
 DOI:10.4018/IJGBL.2016010102 Webster University Vienna
https://www.researchgate.net/publication/291139939_An_Overview_and_Study_on_the_Use_of_Games_Simulations_and_Gamification_in_Higher_Education
- Wladis, C., Conway, K. M., and Hachey, A. C. (2015). The online STEM classroom—who succeeds? An exploration of the impact of ethnicity, gender, and non-traditional student characteristics in the community college context. *Commun. Coll. Rev.* 43, 142–164. doi: 10.1177/0091552115571729
- Whitelock D (2019) Editorial: e-assessment: Developing new dialogues for the digital age. *Br J Educ Technol* 40(2):199–202
https://www.researchgate.net/publication/240605167_Editorial_e-assessment_developing_new_dialogues_for_the_digital_age

Xu, D. & Jaggars, S. (2014). Performance Gaps between Online and Face-to-Face Courses: Differences across Types of Students and Academic Subject Areas, *The Journal of Higher Education*, 85:5, 633-659, DOI: 10.1080/00221546.2014.11777343