

Effectiveness of English as A Medium of Instruction in Physical Education

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Abstract: Using quasi experimental design, the study was conducted primarily to compare the effectiveness of using English as a medium of instruction in Physical Education with Chinese as a medium of instruction in Physical Education course. Based on the results of the research, the following conclusions were drawn: The students who belong to the Chinese (control group) and English (experimental group) showed that they have a low performance in their pretest scores in knowledge and competence which proved that they had a low understanding before instruction, as such the students did not meet the average level of proficiency in Physical Education subjects in terms of knowledge and competencies. It can be inferred that students' scores were lower on the pre-test because they had not yet studied the material which was tested. Furthermore, the following were also inferred based from the results: A significant difference in the knowledge and competencies of the control and experimental group based on their pre-test scores was noted as such there should be interventions even before the experiment. This suggest further that students who were exposed to usage of Chinese as a method of teaching in PE still registered a significant increase in the students' knowledge and competencies. The difference between the post test scores in the two groups in favor of the experimental groups was proven significant. This means that learning took place in the usage of English as a medium of instruction in the experimental group while no significant difference was noted in the level of proficiency in knowledge based on the post test of the control and experimental groups. However, a significant difference was observed on the level of proficiency in the post test results of the two groups in the area of competencies. The increased in the post-test which means that they have retained what they have learned better when they were taught Physical Education using English as a medium of instruction. Significant difference was observed in the level of proficiency in terms of knowledge and competencies in the pre-test and posttest results of the experimental group. Furthermore, no significant difference was noted in the level of proficiency in terms of knowledge and compencies in the pre-test post test results of the control group. On this basis it can be concluded that usage of English as a medium of instruction was effective. This conclusion only applied to the specific context of this study and the specific measures used to assess the effectiveness. There was a low number of participants involved in the study as a result caution was needed to be taken regarding the generalization of the findings.

Keywords: Physical Education; English as a Medium; Effectiveness.

1. Introduction

Education is an instrument in preparing younger generation to a complex society and teachers are the agents of change and communicators in the venue of learning process. The quality of education that a student may have depends on the quality of teacher's method of teaching and delivery of instruction[1]. One of the most important factors that should be given attention is the language or medium of instruction since it is one way to ensure the efficient and effective transmission of information during the learning process[2]. Through language, the process of teaching learning process is possible.

At present, there exist a challenge addressed to Physical Education teachers in the academe i.e. to continuously search for new and effective ways of imparting knowledge. Being the agents of change, teachers then are expected to be innovative and not just confined to the traditional way of teaching[3].

For teachers of today's generation who cater to students with different competencies and learning styles, a different approach to teaching Physical Education is necessary[4]. The academic success of students can be determined by measuring the amount of information learned and measuring how much of this information is processed and beneficial[5].

One measure that the university has adopted is Using

English as a medium of instruction (EMI).

Background of the Study

Significant changes in China's directive (MOE 2001) to adopt English as a Medium of Instruction (EMI) initiated the researcher to test the effectiveness of using English as a medium of Instruction in Physical Education. Other reasons are as follows: Various studies from around the world have mentioned the following reasons for teacher and student support of Using English as a Medium of Instruction; English has become a lingua Franca in the Academic world [6], Internalization at home[7], Perceived Effect of English on Employability[8]; and Most academic research are published in English and about a greater percent of research in international , high – impact publication is in English.

Due to the aforementioned reasons, the university has adopted is using English as a medium of instruction (EMI). As a result of this directive in switching to EMI in Physical Education courses, the major concern of the researcher was to measure how much content would the students absorb and was the EMI effective as a medium of instruction [9]. With this problem in mind, the researcher thought of utilizing quasi experimental research to compare and find out the effectiveness of English as a media of instruction in teaching the students the knowledge and competencies in Physical Education [10].

2. Related Theory

2.1. Theoretical Framework

The Theory of Multiple Intelligence

With the progress of human society, more and higher requirements have been proposed for talents, and people's definition of talents and educational concepts should change in accordance with the development of the times. In his theory of multiple intelligence, Garnard holds that every person has at least eight kinds of intelligence, and each kind of intelligence does not exist alone; for different people, their development levels of the eight kinds of intelligence are different; even for a person, the development levels of the eight kinds of intelligence vary in different life stages.

Therefore, through training and hard work, everyone can exert these eight intelligences to a relatively high level. Figure 1 shows the research self-designed better improvement of English learning based on the multiple intelligence theory. The essence of education is to cultivate the social activities of people, colleges and universities are the cradle for cultivating talents, so the college English teaching should learn from the theory of multiple intelligence, and use diversified teaching methods and evaluation methods to continuously tap the potential of students, teach them in accordance with their aptitude, and promote them to develop in an all-round way.

The design of English teaching, based on the theory of multiple intelligences, before English teaching, the English teachers usually need to design the teaching works; teaching design contains three parts, the specific content is given in Figure 6. At first, teachers need to analyze students' personality, learning motivations, learning interests, and other learning situations; then, after figuring out the learning features and requirements of students, teachers need to analyze and research the teaching content based on the syllabus and curriculum standards. On this basis, the designed English course needs to meet the teaching goals, and teachers need to design the specific teaching strategies, and the specific teaching techniques and activities for different teaching contents; in addition, scientific and reasonable teaching evaluation methods and standards should be designed to ensure that the teaching activities could be carried out smoothly and the teaching goals could be achieved.

Under the instruction of the theory of multiple intelligences, the college English teaching should pay special attention to introducing more teacher-student interaction links based on the traditional lecturing mode; according to the specific teaching content and the personality and advantages of different students, teachers can reasonably make use of the multimedia technologies and forms such as audios, videos, and animations to display the learning content to students in a more intuitive way, so as to motive their learning initiative.

Also, various classroom teaching forms, such as English speech contests, English sitcoms, English debate contests, and English song contests, could be applied to enrich the English class and give full play to students' dominant role in class, in this way, every student could find fun in English class, they can exert their own advantages, and develop all their intelligence. Practice after class, and finally create a better classroom learning atmosphere, so as to improve the learning effect of English classroom for PES.

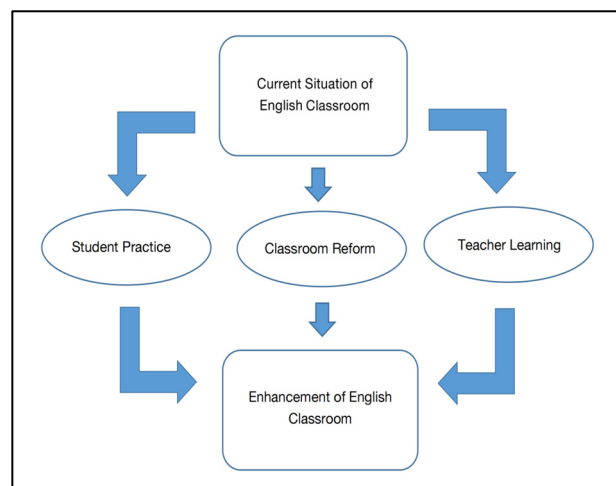


Figure 1. Self-Design based on theory of multiple intelligences

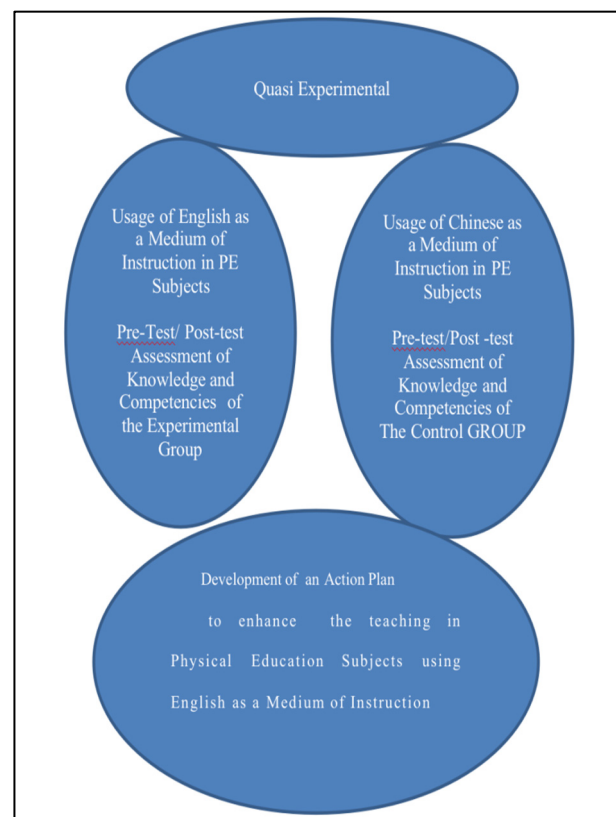


Figure 2. Research Paradigm

As shown in figure 2, there are two types of respondents, the control group who was taught Physical Education subjects using Chinese as a medium of instruction. The other was the experimental group who was taught Physical Education using English as a Medium of Instruction. Both groups were given a pre-test at the beginning of the intervention and a posttest in the area of knowledge and their competencies in Physical Education after six weeks of teaching the subject in Physical Education. Pretest and post test scores were then compared for significant difference.

2.2. Hypothesis

H1. There was no significant difference in the academic performance on knowledge and competencies in Physical Education in the Control group and Experimental group based on their Pretest scores

H2. There was no significant difference in the academic performance of the respondents on Knowledge and

Competencies in Physical Education subjects in the Control and Experimental group based on their Post test scores

H3. There was no significant difference in the academic performance of the respondents on Knowledge and Competencies in the Control and Experimental group based on their pre-test and post test scores.

2.3. Definition of Terms

For purpose of clarity the following terms were defined operationally:

Academic Performance. It is the measurement of student achievement across various academic subjects.

Control Group. This group was taught selected Physical Education subjects in PE using Chinese as a medium of instruction. This group was separated from the rest of the experiment, where the independent variable being tested cannot influence the results.

Experimental Group. This refers to the other class composed of 25 students who were enrolled in Physical Education. This group was taught Physical Education subjects using English as a medium of instruction. This group was exposed to the variable in the study.

Pre-test. This was the test administered to the control and experimental group before the intervention.

Post – test. This refers to the test parallel with that of the pre-test that was administered to the control and experimental group immediately after the intervention.

Quasi Experimental Design. This research design in an educational effectiveness study in which effectiveness is based on the comparison of achievements of two groups of students, the experimental and control group, but where groups are not created through random sampling.

3. Methodology

The chapter presents the research design and techniques used by measure in conducting the study. It includes respondents of the study, research instrument used data processing and the statistical tools utilized in the analysis and interpretation of data.

3.1. Research Design

The investigation utilized the quasi-experimental type of research in two heterogeneous classes. Quasi experimental design was used to evaluate the effectiveness of an intervention when the intervention has been implemented. The two groups formed: the experimental group consisted of thirty (30) students who were taught Physical Education subjects using English as a medium of instruction; and control group comprised of thirty (30) students who were taught Physical Education Subjects using Chinese as a medium of instruction.

3.2. Research Locale

The study was conducted in the School of Physical Education, Chengdu University, which is located in Chengdu city, Sichuan Province, China. The number of students in various majors at Chengdu University is around 20,000, from all over the country. Among them, the total number of School of Physical Education is about 1,000, and they also come from all over the country.

There are about 500 freshman and sophomore students. Since juniors and seniors no longer have English courses, they were excluded in the research study.

Therefore, this study involved freshmen and sophomore

students majoring in physical education as respondents of the study.

3.3. Population and Sampling Technique

This study used percentage sampling method to choose the students in the School of Physical Education. The researcher selected 12% from the total of 500 making a total of 60 students. Thirty physical education students represented the Control group and another thirty students comprised the experimental group.

3.4. Data Gathering Procedure

A letter requesting permission to conduct the study was sent to the Dean of the School of Physical Education. When permission was granted, the researcher asked the respondents to formalize their consent to be part of the research by answering the questionnaire. Prior to the conduct of the experiment, the researcher passed the ethics statement that was observed from the beginning to the end of the research study. The ethics statement was given to the principal, class adviser, and the students as the respondents of this study.

After obtaining the permission from the administrator of the university, a pre-test was given to both groups before the experimental period started. Afterwards, the control group was taught for six weeks in Physical Education subjects with Chinese as a medium of instruction. On the other hand, the experimental group was also taught the same subjects with the same span of time using English as a medium of instruction. After six weeks of discussion of the topics the post-test was administered. The performance of the students was measured based on their achievements on the teacher-made test.

3.5. Research Instruments

This study employed a self-made pretest/posttest in Physical Education subject for the experimental and control groups. The test consisted of 30 items test including topics in concepts, principles, application and performance. The test was validated by experts and pilot tested for reliability. The obtained Cronbach alpha coefficient was equivalent to .77 for knowledge and .81 for concepts.

3.6. Respondents of the Study

The research participants were two heterogeneous classes from the Physical Education classes. Thirty students who comprised the experimental group was taught Physical Education Subjects using EMI. There were also 30 students in the control group who were taught Physical Education subjects using Chinese as a medium of instruction.

3.7. Statistical Treatment of Data

For ease of the analysis of the data gathered, the researcher employed the following statistical tools and treatments for the analysis of the data:

3.7.1. Frequency Count and Percentage

This was used to measure the profile variables in the study.

3.7.2. Weighted Mean

This was used in the analysis of data based on the respondents' answers in SOP number 2.

3.7.3. Standard Deviation

This was employed in every item that required the mean values to determine the measures of dispersion of the responses given by the respondents.

The questionnaire used the following Likert scale

description:

Table 1. Likert scale description

Scale	Verbal Analysis	Interpretation
3.51-4.00	Strongly Agree	Highly Proficient
2.51-3.50	Agree	Proficient
1.51-2.50	Disagree	Low Proficient
1.00-1.50	Strongly Disagree	Very Low Proficient

3.7.4. Dependent t-test

This parametric test was used in testing the significant differences in the view for English teacher of the respondents if English teacher's behavior is taken as test factor.

3.8. Decision Criteria

The analysis of the hypotheses was carried out using the 0.05 level of significance.

4. Results, Analysis, and Interpretation

In this chapter, the researcher tabulated and discussed the research findings with the developed output.

4.1. Academic Performance on Knowledge in Physical Education Subjects of the Control and Experimental Groups based on Their Pre-test in Terms of

Table 2. Knowledge in Physical Education subjects

Control				Experimental			
Wm= 92				Wm=28			
Pretest Score in Concepts	f	%	Decision	Pretest Score in Concepts	f	%	Decision
33	1	3	Low Proficient	1	10	33	Very Low Proficient
67	6	20	Proficient	33	15	50	Low Proficient
100	23	77	Highly Proficient	67	5	17	Proficient
N=30				N=30			

76- 100 Highly Proficient 51-75- Proficient

26- 60- Low Less Proficient 0-25-Very Low Proficient/Not Proficient

Table 2 presents the pre- test scores in concepts of students in the control group that shows 23 or 77% obtained a score equivalent to 100 and interpreted as Highly Proficient; 6 or 20% is Proficient; 1 or 3% is low proficient .

On the other hand, the pre-test scores of students in the experimental group shows that only 5 or 17% obtains the highest score of 67 which is interpreted as Proficient; half or 50% is low proficient in the area of concepts. It can be gleaned from the results, based from their weighted mean value of 92 and 28 respectively, that the academic performance in concepts of the control group is higher than the academic performance of the experimental group.

The result can be attributed to the fact that topic was not yet discussed when the pretest was administered. In the pre-test phase, the teacher administered the test and records student data to guide instruction and analysis. The results implied that there were more highly proficient students in knowledge in terms of concepts in the control group as compared to that of the experimental group.

Table 3. Principles status of Physical Education

Control				Experimental			
Wm = 16				Wm=21.3			
Pretest Score in Principles	f	%	Decision	Pretest Score in Principles	f	%	Decision
1	19	63	Vey Low Proficient	1	12	40	Very Low Proficient
33	8	27	Low Proficient	33	12	40	Low Proficient
67	3	10	Proficient	67	3	10	Proficient
				100	3	10	Highly Proficient
N=30				N=30			

76- 100 Highly Proficient 51-75- Proficient

26- 60 -Low Less Proficient, 0-25-Very Low Not Proficient

Based on the results of the pretest score in principles of students in the control group presented in table 3, there are only 3 who obtained a score of 67 which means that in this group. There is only 10% of students who are proficient in the area of Principles in Physical Education ; 8 or 27% of students are low proficient; and 19 or 63% of students are Very low Proficient. Moreover, the results show that in the experimental group, the highest pretest score is 100 , which means that three or 10% of students are highly proficient in Principles of Physical Education. Furthermore, the result also shows that there are three or 10 % of students who obtained a score of 67; in the Experimental group only 3 or 10% of students obtained a perfect score; 12 or 40% of students obtained the lowest score of 1; and 12 or 40% of students are low proficient in this area.

The findings confirmed that both groups of students, i.e. Control and Experimental, are very Low Proficient in Principles of Physical Education and this is substantiated by the obtained overall mean rating of 16 and 21.3 respectively. It should be noted that students scores were lower on the pre-test because they have not yet studied the material which was tested since posttest results are always higher.

Computing the average scores of the concepts and principles, the control group showed an average score of 54, while the experimental group had an average score of 24, which implies that the students in control group are proficient in knowledge, while the students in experimental group have very low proficiency.

4.2. Academic Performance on Competencies in Physical Education Subjects of the Control Group and Experimental based on their Pre-Test Scores in Application and Pre-test Score in Performance

The results in table 4 reveals that both the Control and Experimental groups are very low proficiency in terms of Application in Physical Education and this is proven by the overall mean results in their weighted mean values which are equal to 10.6 and 16.01 respectively. In terms of frequency distribution, the highest score obtained by 9 or 30 % of the respondents in the control group is 33, while there is one or 3% from the experimental group obtained the highest pretest score of 100. Another dissimilarity is the number of students who are lowproficient in application, and this is evident from the computed frequency distribution, which can be seen that in terms of application, there are 9 or 30% from

the control group and there are 11 or 37% from the experimental group. Another disparity is the number of Very Low Proficiency in Application in Physical Education particularly in the control group where there are 21 or 70% and 18 or 60% obtained the lowest score of one. The difference of 5.41 in their very low mean scores leads to the confirmation that both groups are comparable when it comes to application.

Table 4. Application in Physical Education

Control				Experimental			
Wm = 10.6				Wm =16.01			
Pretest Score in Application	f	%	Decision	Pretest Score in Application	f	%	Decision
1	21	70	Very low proficient	1	18	60	Very Low Proficient
33	9	30	Low Proficient	33	11	37	Low Proficient
				100	1	3	Highly Proficient
N=30				N=30			

76- 100 Highly Proficient 51-75- Proficient
26- 60 -Low Less Proficient,0-25- Very Low Not Proficient

Table 5 reveals that there are 2 or 7% from the control group obtained 33 as pretest score, while 19 or 63% from the experimental group obtained the same score. The highest pretest score obtained by the threestudents in the experimental group is 67 which implies that 10% are proficient in the control group.

Furthermore , there were more students who are Very Low Proficient in the area of Performance in Physical Education in the Control group (28,93%) and (8, 27%) in the Experimental group. It can also be inferred that the Control group of

students are Very Low Proficient in terms of Performance as confirmed by the 3.13 mean rating obtained in their pretest scores. Whereas the students in experimental group are low proficient in Performance in Physical Education apparently from the obtained mean rating of 27.87 in their pre-test scores.

Table 5. Performance on both control group and experimental group

Control				Experimental			
Wm =3.13				Wm=27.87			
Pretest Score in Performance	f	%	Decision	Pretest Score in Performance	f	%	Decision
1	28	93	Very Pow Proficient	1	8	27	Very Low Proficient
33	2	7	Low Proficient	33	19	63	Low Proficient
				67	3	10	Proficient
N=30				N=30			

76- 100 Highly Proficient 51-75- Proficient
26- 60 -Low Less Proficient, 0-25- Very Low Not Proficient

Based on the computed average scores of the control group and experimental group on the indicators and performance and application, it can be deduced that their academic competencies were very low and this is substantiated from the computed average scores of 6.95 and 21.94 respectively.

4.3. Significant Difference in the Academic Performance on Knowledge and Competencies in Physical Education in The Control Group and Experimental Group Based on their Pretest Scores

4.3.1. Knowledge

Table 6. Knowledge in Physical Education

Indicator	Mean	SD	t	df	sig	Interpretation	Decision
Pre-test of Control	6.93	7.9	6.23	29	0	Significant	Reject null
Pre-test of Experimental	22.1	9.8					

Based on the results in Table 6, the statistical analysis using Paired sample t test revealed that there is a significant difference in the pretest scores of the Control and Experimental in the area of Knowledge in Physica Education. This conclusion can be proven by the sign value of .00 which is less than the .05 level of significance set in the study.

The result of a significant difference in the Pre- test scores in knowledge of the two groups could be attributed to the grouping pattern and the student characteristics . This indicates that both groups do not have the same Knowledge

before being subjected to the teaching method. It can also be inferred that the experimental group were likely to be heterogeneous in scores as revealed by the variance which was more spread.

With this findings it can be recommended that interventions have to be delivered to pre- existing classes even before the interventions.

4.3.2. Competencies

Table 7. Competencies in Physical Education in The Control Group and Experimental Group

Indicator	Mean	SD	t	df	sig	Interpretation	Decision
Pre-test of Control	6.93	7.9	-6.49	29	0	significant	Reject Null
Pre-test of Experimental	22.1	9.8					

Based on the data presented in table 7, it can be inferred that there was a significant difference in the Pre-test scores on Competencies of the control and experimental group. A difference of 15.17 was proven significant in favor of the experimental group and this inference was based from the generated sig value of .000. In as much as the sig value is less

than the 0.05 level of significance set in the study, this was a substantial proof to refute the null hypothesis at 5% probability. The value of the mean of the pretest of the control and the pre-test of the experimental could also lend credence to the foregoing conclusion which is 6.93 and 22.1 respectively. The above findings also indicated that the

control and experimental group were most likely homogeneous as signified by the value of the variance.

4.4. Significant Difference in the Academic Performance of the Respondents on Knowledge and Competencies in the Control and Experimental Group based on Their Pre-Test and Post Test Scores

Presented in table 8 is the result of the Pre-test Post test on knowledge and Competencies of the Control group. It can be observed that there was a slight difference of 0.30.in the

mean scores of their pretest and posttest scores in knowledge and competencies. As such, no significant difference was generated in the mean test scores between the pre-test and the post -test scores on knowledge and competencies of the control group This finding was inferred from the computed t value of -2.76 and sig value equal to .792 which is higher than the 0.05 level of significance in the study. Therefore, it can be deduced that the null hypothesis of no significant difference was accepted. The study further implied that there was a slight improvement in the Knowledge and competencies of the Physical Education students.

Table 8. The result of the Pre-test Post test on knowledge and Competencies of the Control group

	Mean	SD	SD	t	df	sig	Interpretation	Decision
Pre-test on knowledge and Competencies of the Control	25.68	9.79	9.79	-2.76	29	0.792	Not Significant	Accept Null
Post -test on knowledge and Competencies of the Control	25.98	13.1	13.1					

Table 9. The result of the Pretest and Posttest of Knowledge and Competencies

	Mean	SD	t	df	sig	Interpretation	Decision
Pre-test on knowledge and competencies of Experimental group	22.1	10.26	3.47	29	0	Significant	Reject Null
Post -test on knowledge and competencies Experimental group	32.58	13.1					

Table 9 shows the result of the pretest and posttest of knowledge and competencies after the conduct of the research. A significant difference was noted between the mean test scores of the pre-test and post test scores on Knowledge and competencies of the Experimental group. This finding was supported by the computed t value of 3.47 and a sig value of.000 which is less than0.05 the level of significance set in the study. This result implied a rejection of the null hypothesis.

The result further proved that learning took place and that they have retained what they have learned when English was used as a medium of instruction in Physical Education subjects. Moreover, the improvement of the mean scores can also be attributed to the application of appropriate teaching strategies .

5. Conclusion

Based on the findings and results of this study, the following conclusions were drawn:

The students, who belong to the Chinese (Control Group) and English (Experimental Group), showed that they have a low performance in their pretest scores in knowledge and competencies which proved that they had a low understanding before instruction. As such, the students did not meet the average level of proficiency in Physical Education subjects in terms of knowledge and competencies because the students scores were lower on the pre-test since they have not yet studied the tested material.

Based on their pre-test scores, a significant difference in the knowledge and competencies of the control and experimental group was noted as such there should be interventions even before the experiment. This suggested further that students who were exposed to usage of Chinese as a method of teaching in PE still registered a significant increase in the students knowledge and competencies.

The difference between the post test scores in the two groups in favor of the experimental groups was proven significant. This means that learning took place in the usage of English as a medium of instruction in the Experimental group.

There was a low number of participants involved in the study as a result caution needs to be taken regarding the generalization of the findings.

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