



## Dependence of Academic Performance on English Speaking Anxiety in Academic Programs of English Medium Instructional Context

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### ABSTRACT

*Most countries in the world have adopted English Medium instruction in universities. The increasing global trend of the English language as the medium of instruction has made researchers focus on students' adjustment and performance in English medium instructional contexts. One key issue highlighted in English medium instruction is English speaking anxiety. The literature has pointed out that English language speaking anxiety among students has a dependency on their personal and interpersonal worries and the context of learning. Pakistan is also a country that has adopted English medium instruction at different levels of education. Therefore, the current study probed the dependencies of English language speaking anxiety on students' academic programs and how these anxieties impact students' academic performance in Pakistan. The survey study design consisted of convenience or accidental sampling. The structural equation modeling helped researchers infer the significance of academic programs' impact on academic performance, the effect of language anxiety dimensions on academic performance, and the impact of academic programs on academic performance via English-speaking anxieties. The academic departments significantly impact students' academic performance directly and indirectly through language-speaking anxieties.*

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### 1. Introduction

In an era of modern times, the English language has occupied a pivotal position in the league of international languages and has become a tool of globalization (Schneider, 2014). This world language

is not limited to only being used for translation communication, but it is now the language of business, diplomacy, education, arts, sports, and tourism (Schneider, 2014). The English language is successful enough to compete with national languages in different countries such as Japan, Germany, Spain, and France (Shohamy, 2014). The educational policies of various nations have introduced English as a compulsory subject at the primary level (Nunan, 2003), and most of the countries have opted for the English medium of instruction and examination at higher education level (Foyewa, 2015). English has been recognized as the language of science and research (Gordin, 2015), and more than 98% of international scientific research is published in English (Ramírez-Castañeda, 2020).

This mounting importance of English in an era of globalization has highlighted different issues related to English language learning in non-native English-speaking countries. In teaching English, whether as a foreign language, or a mainstream subject, the four skill areas are focused on; reading, writing, speaking, and listening (Hinkel, 2006). However, English speaking skills depend on several other vital skills: content, discourse, information structuring, and the sound system (Nunan, 2003). These sub-skills put students under stress while speaking and anticipating English speaking situations, and students might undergo anxiety. Public speaking anxiety is considered a panic of delivering a speech or talk in public or a classroom because the speaker worries about negative feedback and expects humiliation from others (American Psychological Association, 2020). At the same time, the field has turned into English language anxiety, and the researchers now see this as a global phenomenon (Nunan, 2003). From a psychological perspective, these are undesired cognitive and physiological reactions to a social and public speaking environment that end in difficulties in speaking effectively (Fremouw & Breitenstein, 1990). In other words, language anxiety is the condition of uneasiness felt by the learners in situations that involve the use of the English language, such as the classroom or formal and informal discussions (Gardner & MacIntyre, 1993). Although anxiety is mostly prevailing among students, it moderately impacts routine life (Rapee *et al.*, 2009).

Often, academicians use communication apprehension and audience anxiety in place of speech anxiety (Fremouw & Breitenstein, 1990). However, it is a distinctive variable in foreign language learning, and it has unique ramifications because students often think that they do not have the mental ability to learn a foreign language, and they feel that they are not capable of learning this language (Horwitz *et al.*, 1986). Students who suffer from English speaking anxiety avoid potential communication situations to reduce speaking stress (Pappamihel, 2002). Ultimately, the probability is that this will negatively impact students' academic performance (Aida, 1994). Such students might develop negative beliefs about themselves. For example, they believe that they lack ability, have low intelligence, and are naturally not capable of learning this language (Horwitz *et al.*, 1986). This higher language speech anxiety reduces their internal motivation to learn, and they become anxious during learning and fail to communicate their learning and feelings (Young, 1991). It damages their interpersonal relationships, self-reliance, self-esteem, and consequently, they become stressed and depressed (D'Esposito *et al.*, 2011).

Although personal and interpersonal worries play a critical role in developing language speech anxiety, students' language learning beliefs, teacher-student interactions, classroom environment, and students' language backgrounds also play a prominent role in English speech anxiety (Young, 1991). This language anxiety has a more adverse impact at the university level because teacher-student dialogues and discussions are integral to higher education. Therefore, students' unwillingness and inability to communicate hinder their effective communication with teachers at the university level; consequently, they have to suffer academically (Boohar & Seiler, 1982). Furthermore, those students' academic performance is adversely affected who study subjects that have laboratory work or fieldwork

as part of their educational activities (Miller & Edmunds, 1992; Seiler *et al.*, 1978). Furthermore, this anxiety is more heightened in small group classes because there is a possibility of frequent teacher-student communication and dialogue (McCroskey, 1977).

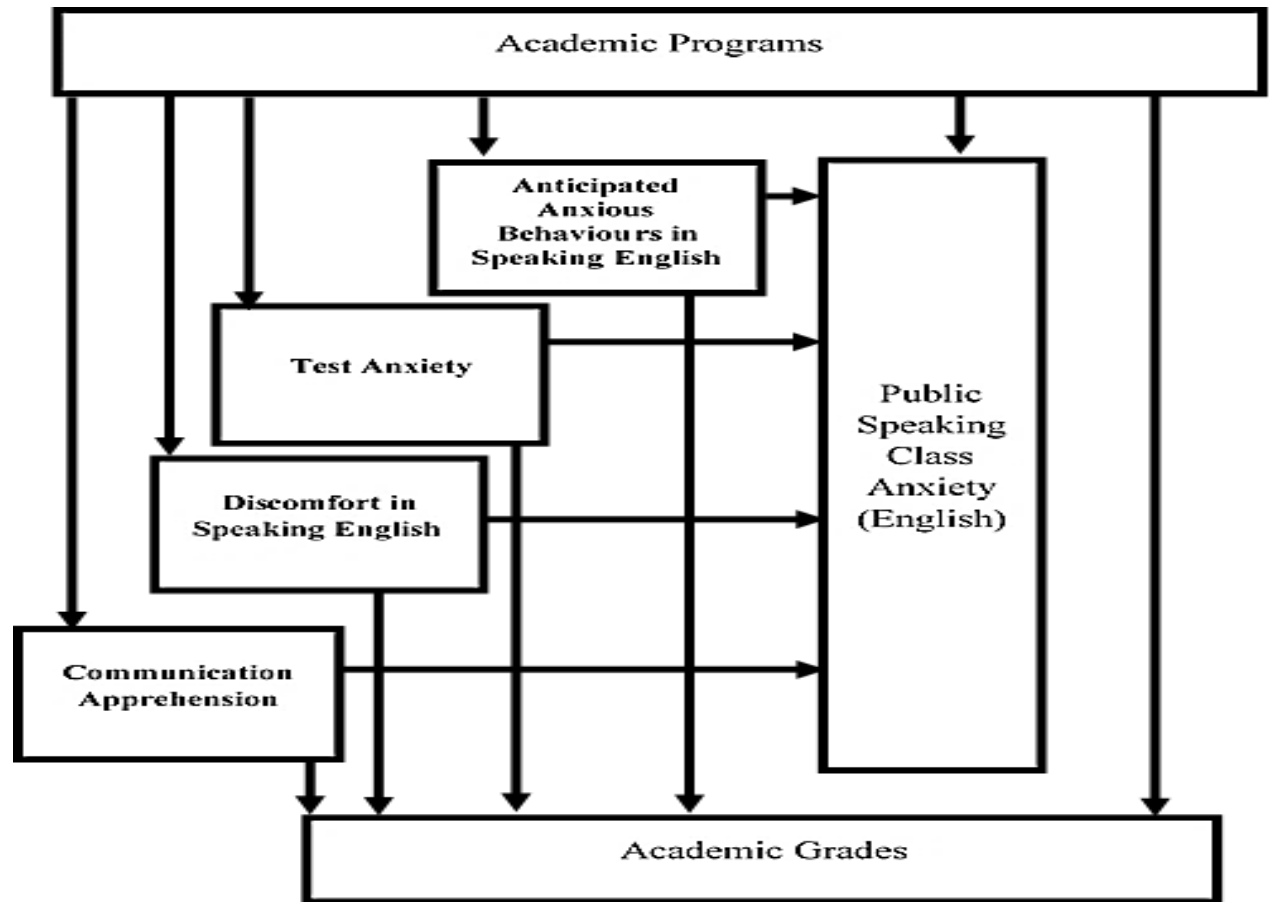
## **2. Conceptual Framework**

The students' speech anxiety impedes their learning, and they develop a variety of undesired psychological and mental health issues such as stress, depression, low self-esteem (D'Esposito *et al.*, 2011; Young, 1991), which might be even more harmful to the students not even from the educational perspective but also for overall general health and living (Hughes *et al.*, 2008). Therefore, it is essential to identify English speaking anxiety levels in students. In the ever-increasing importance of the English language in the globalization era, different efforts are underway to understand nature, develop measures, and ascertain the impacts of English speech anxiety on students learning. However, there are various measures, definitions, alternative terms, and construct labels such as communication apprehension, public speaking anxiety, and language anxiety or English speech anxiety (Young, 1991). Yaikhong and Usaha (2012) combined all these measures and proposed an English speech anxiety model that unified all mainly used measures, concepts, and terms in a Thai study. The Public Speaking Class Anxiety Scale in English comprises four dimensions of English speech anxiety; Anticipated Anxious Behaviours in Speaking English, Comfort in Speaking English, Communication Apprehension, and Test Anxiety (Yaikhong & Usaha, 2012). Yaikhong and Usaha (2012) identified commonalities in the various famous instruments of foreign language anxiety and combined these models into a single English-speaking anxiety measurement model.

For the reasons, speech anxiety can be most prevalent in situations associated with frequent student and instructors interaction, such as lab work in science classes (Seiler *et al.*, 1978), small classroom settings (McCroskey, 1977), and university education (Boohar & Seiler, 1982). Hence, speaking anxiety is anticipated to be more related to students' grades in those situations. Therefore, it is important to test this model in contrasting classroom environments.

Young (1991) recommended that the relationships between academic grades and anxiety types should be probed because English speech anxiety has different dimensions. Therefore, it is needed to examine which dimension impacts students' grades and to which extent. Although previous studies have highlighted the relationships of various academic programs with students' academic performance, there is a need to explore proportions of variance in these differences explainable by the students' speech anxiety in an English medium instructional environment. In an English medium of instruction, students' medium of instruction and examination is English, but English is not their first or second language; instead, it is a foreign language (Macaro *et al.*, 2017). Furthermore, it is worthwhile to explore whether it is possible to explain students' anxiety dimension differences regarding the subject they are studying and how these different dimensions of speaking anxiety impact students' academic grades.

Pakistan has English medium instruction at the university level. Therefore this study aimed to discover students' speaking anxiety links to various academic fields offered to students. Consequently, the conceptual framework shown in Figure 1 depicts that the current study explores the relationships of different academic areas with students' English speech anxiety and their academic performance.



**Figure 1: Conceptual Framework**

Based on the above conceptual basis, the study has the following objectives:

1. To explore the impact of different fields of study on students' English speech anxiety.
2. To discover the impact of different dimensions of speech anxiety on students' academic performance.
3. To identify the impact of students' academic programs on their academic performance.
4. To identify the total effect of academic programs on students' academic performance, including students' English speaking anxieties.
5. To find the mediation role of different speech anxieties in determining the impact of academic programs on students' academic performance.

The researcher formulated the following postulates to fulfil the pre-defined objectives of the study:

1. There will be no significant impact of different fields of study on students' English speech anxiety.
2. There will be no significant impact of different dimensions of speech anxiety on students' academic performance.
3. There will be no significant impact of students' academic programs on their academic performance.
4. There will be no significant total effect of academic programs on students' academic performance, including students' English speaking anxieties.
5. There will be no significant mediation role of different speech anxieties in determining the impact of academic programs on students' academic performance.

### **3. Method**

#### **3.1 Sample**

The study sample was 534 undergraduate and postgraduate students of the Bahawalnagar campus of the Islamia University of Bahawalpur. Researchers used the convenience sampling technique (Gay *et al.*, 2012) in this study. The students available and volunteered to respond were counted as the study sample. The sample comprised 48 (8.98%) social science, 294 (55.05%) science, 27 (5%) computer science and information technology, and 165 (31.46%) English literature students in the sample. The sample size was considered sufficient because it was above the minimum rule of 10 times per arrow in the model (Hair *et al.*, 2017) (Figure 2).

#### **3.2 Data Collection**

The researchers used EFL Public Speaking Class Anxiety Scale (PSCAS) (Yaikhong & Usaha, 2012) to measure students' English language speech anxiety. This scale was developed by Yaikhong and Usaha (2012) by combining different items from the most prevalent English language anxiety scales. The selected items of PSCAS in this study measured four dimensions: Anticipated Anxious Behaviours in Speaking English, Communication Apprehension, Discomfort in Speaking English, Test Anxiety. The PSCAS final version of Yaikhong and Usaha (2012) consisted of 17 items. These 17 items were found relevant and appropriate in the Thai context. However, there were 14 items found suitable in the Pakistani context. The dimensions of Anticipated Anxious Behaviours in Speaking English and Communication Apprehension consisted of four items each, whereas Discomfort in Speaking English and Test anxiety dimensions consisted of three items each. The researchers reversed the coding of 03 Items of Comfort in Speaking English for changing these into discomfort in speaking English to make this dimension cohesive with the other three dimensions that imply speaking anxiety. In this way, 14 items were found valid and reliable in this study (Table No.1 and Table No. 2). The students provided their responses to each statement on a five-point scale of agreement ranging from strongly disagree =1, disagree =2, Neutral =3, Agree =4, Strangely Agree =5. The academic department was coded dummy variables. Each department has two values, 0 and 1.

#### **3.3 Data Analysis**

The researchers used the structural equation modeling approach to identify the significance and strength of anticipated direct and total effects. The structural equation modeling partial least squares approach was chosen because of its robustness to small sample size and normality issues (Hair *et al.*, 2019). Furthermore, the PLS-SEM is suitable for exploratory research (Hair *et al.*, 2017) because the objectives and hypotheses of the study are exploratory. The Smartpls2 software assisted in PLS-SEM modeling.

### **4. Results**

#### **4.1 Measurement Model Analysis**

Table No. 1 and Figure 2 depict different measurement model associated parameters. The values of Average variance extracted (AVE) of four dimensions of English speaking anxiety are above 0.50. it means that the four dimensions of public speaking anxiety have adequate convergent validity (Hair *et al.*, 2019). Furthermore, the composite reliability Rho and internal consistency measure Cronbach's Alpha values are above 0.70. These values reflect the composite reliability and internal consistency reliabilities of dimensions of English speaking anxiety within an acceptable range (Hair *et al.*, 2019). Furthermore, all item loadings on the supposed dimensions of Speech anxiety are significant and above 0.50 because the loading of an item on the latent variable should be above 0.50 to consider its loading significant (Hair *et al.*, 2014).

Table No. 1						
Loadings, Validity and Reliability						
Measure		Items	Loadings	AVE	Composite Reliability	Cronbach's Alpha
Anticipated Anxious Behaviors in Speaking English		PSCAS_2	0.7308***	0.5742	0.8435	0.7576
		PSCAS_3	0.7359***			
		PSCAS_5	0.7986***			
		PSCAS_15	0.7638***			
Discomfort in Speaking English		PSCAS_4R	0.8873***	0.6415	0.8421	0.7209
		PSCAS_10R	0.7704***			
		PSCAS_12R	0.7373***			
Communication Apprehension		PSCAS_9	0.7331***	0.5751	0.8438	0.7581
		PSCAS_11	0.7893***			
		PSCAS_13	0.7933***			
		PSCAS_14	0.7146***			
Test Anxiety		PSCAS_1	0.8906** *	0.606 9	0.82	0.7174
		PSCAS_7	0.7808**			
		PSCAS_17	0.6465**			

P < 0.001= \*\*\*, P < 0.01=\*\*, P < 0.05=\*, Non-Significant= N.S

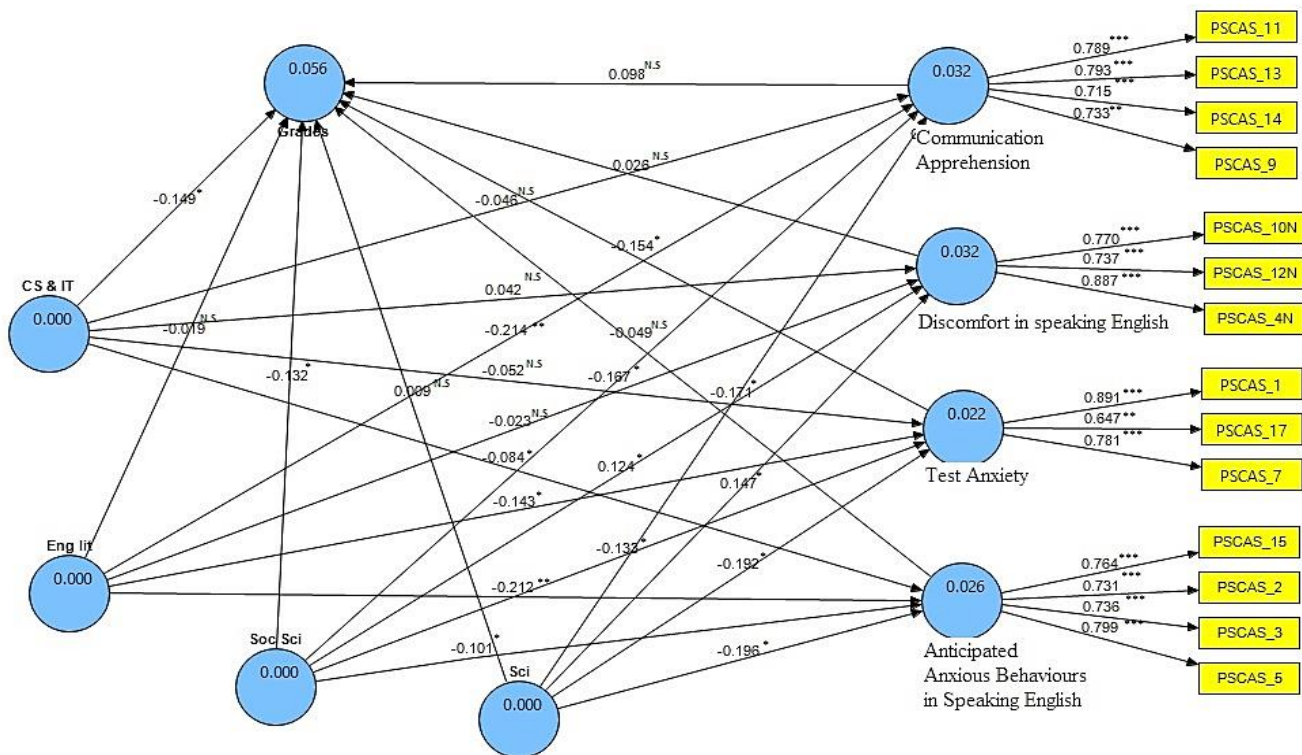


Figure No. 2: First and Second Stage SEM Analysis

The measure model results show that the four latent variables in the model, Anticipated Anxious Behaviours in Speaking English, Communication Apprehension, Discomfort in Speaking English, and Test Anxiety have the discriminant validity (Table No. 2). The square root of AVEs of these latent variables is above their interrelationships with other latent variables in the model (Table No. 2). Hence the data in Table No. 2 affirm that latent variables in the model have discriminant validity (Henseler *et al.*, 2016).

<b>Table No. 2</b>					
<b>Discriminant Validity Latent Variables (Fornell-Larcker Criterion)</b>					
<b>Sr. No</b>	<b>Latent Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Anticipated Anxious Behaviours in Speaking English	<b>0.758</b>			
2	Communication Apprehension	0.737	<b>0.758</b>		
3	Discomfort in Speaking English	0.047	-0.019	<b>0.801</b>	
4	Test Anxiety	0.688	0.675	-0.013	<b>0.779</b>

#### **4.2 Structural Model Analysis**

Table No. 3 shows that different academic programs impact students' English speech anxiety. Various educational programs impart impacts on students' academic grades. The academic programs included in the study, the social science, English literature, Physical sciences, computer science, and information technology, were associated with a significant decrease in students' Anticipated Anxious Behaviours in Speaking English. However, there are differences in the magnitude of these academic programs' negative impact on Anticipated Anxious Behaviours in Speaking English. The computer science and information technology program has the most negligible adverse effect on Anticipated Anxious Behaviours in Speaking English.

In comparison, the English literature department has the highest negative impact on students' Anticipated Anxious Behaviours in Speaking English. Unexpectedly, Physical science impact was the second higher negative impact on Anticipated Anxious Behaviours in Speaking English. It is worth mentioning that students with higher academic backgrounds opt for sciences. The negative impact of social sciences on Anticipated Anxious Behaviours in Speaking English was half compared to the negative effects of the physical sciences and English literature departments on students' Anticipated Anxious Behaviours in Speaking English.

The academic programs significantly impacted students' comfort in Speaking English. The academic programs of social science and physical sciences positively and substantially impact students' discomfort in speaking English. The impact of English literature on discomfort in Speaking English was negative but not significant. These impacts are almost in the anticipated directions.

<b>Table No. 3</b>			
<b>Direct Effects</b>			
<b>Path</b>	<b>Original Sample (O)</b>	<b>Sample Mean (M)</b>	<b>T Statistics</b>
<b>Academic Programs -&gt; Anticipated Anxious Behaviours in Speaking English</b>			
Social Sciences -> Anticipated Anxious Behaviours in Speaking English	-0.1012	-0.1035	2.2259*
English Literature -> Anticipated Anxious Behaviours in Speaking English	-0.2121	-0.2178	4.1778**
Physical Sciences -> Anticipated Anxious Behaviours in Speaking English	-0.1958	-0.2007	3.6389*
Computer Sciences & Information Technology -> Anticipated Anxious Behaviours in Speaking English	-0.0836	-0.0829	2.2744*
<b>Academic Programs -&gt; Discomfort in Speaking English</b>			
Social Sciences -> Discomfort in Speaking English	0.1244	0.126	2.5996*
English Literature -> Discomfort in Speaking English	-0.0229	-0.0237	0.4405 <sup>N.S</sup>
Physical Sciences -> Discomfort in Speaking English	0.147	0.1482	2.769*
Computer Sciences & Information Technology -> Discomfort in Speaking English	0.0424	0.0425	1.0085 <sup>N.S</sup>
<b>Academic Programs -&gt; Test Anxiety</b>			
Social Sciences -> Test Anxiety	-0.1332	-0.134	3.0368*
English Literature -> Test Anxiety	-0.1434	-0.1474	2.6983*
Physical Sciences -> Test Anxiety	-0.1918	-0.1949	3.6787*
Computer Sciences & Information Technology -> Test Anxiety	-0.0518	-0.0518	1.13 <sup>N.S</sup>
<b>Academy Programs -&gt; Communication Apprehension</b>			
Social Sciences -> Communication Apprehension	-0.1669	-0.1717	3.6684*
English Literature -> Communication Apprehension	-0.2139	-0.2183	4.3293**
Physical Sciences -> Communication Apprehension	-0.1709	-0.1743	3.4091*
Computer Sciences & Information Technology -> Communication Apprehension	-0.0457	-0.0453	1.1368 <sup>N.S</sup>
<b>Public Speaking Class Anxiety Scale Dimension and Grades</b>			
Anticipated Anxious Behaviours in Speaking English -> Grades	-0.0494	-0.053	0.8288 <sup>N.S</sup>
Discomfort in Speaking English -> Grades	0.0261	0.027	0.7104 <sup>N.S</sup>
Test Anxiety -> Grades	-0.1537	-0.1461	2.5849*



Communication Apprehension -> Grades	0.0981	0.0928	1.6287 <sup>N.S</sup>
<b>Academic Program and Grades</b>			
Social Sciences -> Grades	-0.1318	-0.1333	2.9743*
English Literature -> Grades	-0.0188	-0.0207	0.3919 <sup>N.S</sup>
Physical Sciences -> Grades	0.0092	0.0077	0.1655 <sup>N.S</sup>
Computer Sciences & Information Technology -> Grades	-0.1488	-0.1482	3.2282*
P < 0.001= ***, P < 0.01=**, P < 0.05=*, Non-Significant= N.S			

There was a significant impact of different academic programs on students' Test Anxiety. Academic programs of physical sciences, English literature, and social sciences negatively impact students' English speech test anxiety. In comparison, the impact of computer science and information technology on English-speaking test anxiety was also negative but insignificant. Likewise, the effects of academic programs of English, physical sciences, and social sciences are adverse and significant. All these students are afraid of speaking English in class and have English communication apprehension. In the case of different dimensions of English speech anxiety on students' academic grades, only the dimension of Test anxiety has a significant negative impact on students' grades. In comparison, the academic programs of social sciences, computer sciences, and information technology significantly negatively affect students' academic grades. The other two academic programs have insignificant impacts.

Table No. 4 shows the total effects of academic programs on students' grades. There are significant total effects of academic programs on academic grades via speech anxiety dimensions. It means that students' speech anxiety can intervene in relationships between students' academic grades and academic programs.

<b>Table No. 4</b>			
<b>Total Effects via English Speaking Anxiety</b>			
<b>The direction of Total Effect</b>	<b>Original Sample (O)</b>	<b>Sample Mean (M)</b>	<b>T Statistics</b>
Academic Programs on grades			
Social Sciences -> Grades	-0.1195	-0.1204	2.6714*
English Literature -> Grades	-0.0079	-0.009	0.1643 <sup>N.S</sup>
Physical Sciences -> Grades	0.0354	0.0347	0.6416 <sup>N.S</sup>
Computer Sciences & Information Technology -> Grades	-0.1401	-0.1397	3.0761*
P < 0.001= ***, P < 0.01=**, P < 0.05=*, Non-Significant= N.S			

Table No. 5 shows the mediation role of dimensions of speech anxiety on students' academic grades. Test anxiety was the only dimension that had a significant negative impact on students' academic grades. In comparison, the academic programs of social sciences and computer science have substantial adverse effects on students' grades. However, only the social sciences academic program has a significant negative impact on test anxiety, whereas the computer science program has an insignificant negative impact. The ratios of total effect and total indirect effect show that the impact of

the social sciences academic field on academic grades is significantly partially mediated by the students' English speech test anxiety.

<b>Table 5</b>					
<b>Summary of Mediation Results</b>					
<b>Hypothesis</b>	<b>Direct effect</b>	<b>Indirect Effect</b>		<b>Total Effect</b>	<b>VAF Decision</b>
	<b>Social Sciences on Academic Grades</b>	<b>Sciences on Test Anxiety</b>	<b>Test Anxiety on Grades</b>		
Mediation English Speech Test Anxiety in the impact of academic programs on students' academic performance	-0.1318	-0.1332	-0.1537	-0.1113	18.41%
Partial Mediation					

Table 6 shows that the hypothesized structural model explains 2.6 % variance in Anticipated Anxious Behaviours in Speaking English, 3.2% variance in Communication Apprehension, 3.1 % variances in Discomfort in Speaking English, and 2.1% variance in test anxiety. The structural model explains a 5.5% variance in students' academic grades.

<b>Table No. 6</b>	
<b>Variance Function of Model</b>	
<b>Variable</b>	<b>R Square</b>
Anticipated Anxious Behaviours in Speaking English	0.0263
Communication Apprehension	0.032
Discomfort in Speaking English	0.0316
Test Anxiety	0.0217
Grades	0.0559

### 5. Discussion

The study found that there is a likelihood that students' English speech anxiety will differ with regard to programs of study. It is found that anticipated Anxious Behaviours in Speaking English were least negatively related in computer science and information technology students, whereas it was most negatively associated with English literature and physical sciences students. The English literature students usually communicate with teachers in English. Therefore, the Anticipated Anxious Behaviours in Speaking English was most negatively related to this academic program. Science students generally communicate in English with teachers during regular class and practical work. Therefore, this practice reduced their Anticipated Anxious Behaviours in Speaking English. Whereas social sciences students are not having dialogue like the English literature and science class students, there is a relatively less negative association with Anticipated Anxious Behaviours in Speaking English.

The study found that social sciences and physical science programs positively associate with the discomfort in speaking English. It is in line with the literature that students of these programs most of the time read the content specific to the subject, and their general speaking skills are not improved. Therefore, they usually feel uncomfortable when explaining things being read or learned.

The fear of negative evaluation and test anxiety were least negatively associated with social sciences and most negatively related to physical science students. It means that social science students are the most to have speech test anxiety. The English communication apprehension was most negatively associated with English literature and physical science students and least negatively related to social sciences. Overall it seems that students of social sciences are the students who can have the most apparent English-speaking anxieties as compared to English literature and Physical sciences students. Although the anticipated anxious English speaking behaviour, communication apprehension, and speaking discomfort seem unrelated to academic grades, The English speech test anxiety was the only one that appeared relevant to students' academic grades. It is in line with the literature because general anxiety is also related to lower academic grades (Siebers, 2015; Vitasaria *et al.*, 2010). The same general anxiety is reflected in students' speech anxiety. Therefore, it appears that English speech anxiety components, communication apprehension, discomfort in speaking English, and anticipated anxious English speaking behaviour have some different roots and implications than the test anxiety element of English speech anxiety. Here general anxiety seems reflected in English-speaking test anxiety. This finding corroborates earlier findings that high levels of anxiety in students are associated with their low academic grades (Siebers, 2015; Vitasaria *et al.*, 2010)

In this way, the test anxiety element seems to mediate the impact of the social sciences program of study on students' academic performance. The other dimensions do not lead to significant relationships to academic grades. Therefore the remaining three dimensions do not significantly mediate the relationships between academic programs and academic grades.

This study corroborates that subject nature and classroom practices impact students' anxiety levels. The students' academic performance or academic grades vary with regard to their academic programs. The relationships of social science are less negative with different dimensions of English language anxiety, and consequently, it has a negative association with students' grades. The relationship of social sciences with grades is mediated by test anxiety. These affirm the prior findings that English speech anxiety is negatively associated with students' academic performance (Amiri & Ghonsooly, 2015).

Furthermore, it is reiterated that students' speech anxiety can mediate the relationship between students' academic programs and academic grades. The social sciences students receive education in partial English medium instruction. Therefore, they might have high speech anxiety (Chou, 2018).

The science students are optimistic and enthusiastic about the English medium of instruction (Al-Masheikhi *et al.*, 2014). Therefore, the lesser levels of anxiety than social sciences students in speech anxiety are understandable. Another factor of high anxiety in social sciences students is that most of the subjects offered to social sciences' students before entering into university education in Grades: 10-12 are in Urdu. Whereas the subjects offered to science students are offered in English. The English background of science students, compared to social science students, assist science students in overcoming their speech anxiety.

## **6. Conclusion**

The impact and direction of different dimensions of English speaking anxiety depend on the courses and academic programs the students study. However, the test-anxiety element in English speaking anxiety, roots in general test anxiety, might lead to low academic grades in university students in an English medium instruction system. The students in the academic program of social sciences most probably have higher speech or English language anxiety due to non-English medium educational background.

## **7. Recommendations**

It is recommended that teachers in English medium instruction systems should recognize English speech anxiety among students. Universities should provide training to teachers for teaching at universities in Pakistan and counselling students if they have speech anxiety. Clinical support should be provided to help out those students who have higher levels of English speech anxiety. It is of utmost requirement because the prevalence of this psychological mental health situation can lead to further psychological and physical illness of the students.

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