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## Analysis of Mathematics Anxiety among B.Ed. students: A Case Study

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### Abstract

The present study is an attempt to analyze the Mathematical Anxiety among student-teacher of district Sukkur of Sindh Pakistan. The aim of study was to analyze the causes of mathematics anxiety among student teacher, and to examine the relationship between mathematics anxiety and avoidance to teach mathematics.

Keep in view the topic of present research the mixed methods approach was employed. The quantitative data gathered through surveys while the qualitative data collected through interview protocol to help elaborate on the quantitative data. The sample of study comprises of students of B.Ed. program of district Sukkur and another tool was interview protocol. Data were gathered with the help of an online survey which was completed by 50 student-teachers and follow up face-to-face interviews with five of them. Quantitative data was analyzed in percentages and for qualitative (interviews) data was analyzed by using thematic approach. The findings show that the huge number of student- teachers have mathematics anxiety due to bad experience in Mathematics classroom experience caused by the teacher's traditional attitude and traditional strategies of teaching.

Recommendations are made to decrease the development of mathematics anxiety among the student- teachers and break re-occurring cycle of anxiety. Teachers can do away with student's misconception while teaching mathematics by using interactive approaches of teaching. While teaching math's, the focus of teacher should be students leaning not teaching. More focus should be on formative assessment in Math's classroom. Math's should be presented as an enjoyable subject rather than a difficult subject.

**Keywords:** Mathematics Anxiety, B.Ed Student, Mathematics Avoidance, Sukkur.

### Introduction

Mathematics play vital role in our daily life. It helps learner to understand world around us by disclosing the hidden pattern and abstract concept (Kumari, 2015). Despite its huge importance,

mathematics is often viewed as a challenging subject. The difficult view of mathematics is due to anxiety that individuals have for mathematics (Fulya, 2008). According Richardson and Suinn "Mathematics anxiety can be defined as feelings of tension and awkwardness that hinder the manipulation of numbers and make difficult to solve mathematical problems in an ordinary and academic situations"(as cited in Rayner, Pitsolantis, & Osana, 2009, p. 61). It is discomfort to solve mathematical problems (Trujillo & Hadfield, 1999). Mathematics anxiety makes person to negatively reacts to circumstances that involve abstract concept of mathematics like numbers, and calculations (Ashcraft & Moore, 2009). The reactions occasionally reach at very negatively affected severe stage in results causes panic, flurry, avoidance to learn, fear of failure, a blank mind, and helplessness (Bekdemir, 2010). Sometimes mathematics anxiety can cause physical symptoms such as rapid heartbeat, feeling faint and trembling while dealing with manipulation of numbers and solving problem (Kumari, 2015).

Furthermore, Mathematics anxiety may lead to mathematics avoidance (Tobias, 1993). Mathematics anxiety blocks mathematical learning (Martinez, 1987). It also has affected the feelings of teachers and students toward mathematics. Some school teachers hesitate to teach difficult abstract mathematical content and students struggle in the manipulation of numbers. The hesitation develops the negative attitudes of teachers towards mathematics and promote the development of math anxiety and avoidance to teach mathematics (Allen, 2001). Previous researchers have declared that a great percentage of elementary school teachers and pre-service teachers have high levels of mathematics anxiety (Bursal & Paznokas, 2006). High level of math anxiety can affect the proper teaching of mathematics. Additionally, it may hinder teacher's performance to handle the material in math's classroom in order to sure the cognitive development of students (Allen, 2001). This is a major issue as there is chances of transformation of math's anxiety from teachers to students.

Researchers (Fiore, 1999; Geist, 2010) have shown that teachers is responsible for math anxiety among student, he or she can develop, increase, decrease or eliminate mathematics anxiety among students. Teacher who has mathematics anxiety are successful in teaching of important mathematical concepts that are fundamentals for further academic growth of students.

Consequently, it is very much important that elementary school teachers must not have mathematics anxiety because teacher who have mathematics anxiety and teach mathematics are more responsible for transmission and development of anxiety among students (Bekdemir, 2010). If the anxieties of these students are not addressed, some of them could take up teaching as a profession in their future and transmit their anxieties to other students, supporting the mathematics anxiety in teachers and students could be cyclical in nature (Adeyemi, 2015). To solve the problem of re-occurring cycle of mathematics anxiety, it is very important to study in detail the causes and effects of teachers' mathematics anxieties on their teaching practices, for breaking the re-occurring cycle of anxiety. While most studies on mathematics anxiety have been conducted with pre-service teachers (Vinson, 2001) and few studies have involved elementary school teachers (Adeyemi, 2015)

Multiple studies show that students of developing countries struggle to understand the mathematics concepts because teachers have anxiety about mathematics and they mostly teach mathematics without aligning content with context. It results in poor learning (Kieran, 1992) Likewise, Mathematics anxiety not allow the development of teachers' effective skills in teaching mathematics as teachers with high mathematics anxiety often use traditional teaching methods,

allocate more time for whole class instruction and traditional teaching, and less time for constructive teaching. Overall, mathematics anxious teachers allocate less class time to teaching the subject concepts and problem solving strategies (Adeyemi, 2015).

### **Objective of the Study**

Considering the need of current situation in Pakistan, the purpose of this study is to analyze the causes of mathematics anxiety that exists among Students of B.Ed. program (Student-teachers) of Sindh, Pakistan. Furthermore, this study also examined its relationship with avoidance to teach mathematics. For this purpose, the following research questions were addressed:

- 1) What are the causes of mathematics anxiety among student-teachers?
- 2) What is the relationship between mathematics anxiety and avoidance to teach mathematics?

### **Significance of the Study**

Current researches in Pakistan does not address the causes of math anxiety among pre-service teacher and the relationship between the mathematics anxiety and avoidance to teach mathematics that is why this study is very much needed. Furthermore, it will help math educators in the implementation of strong pedagogical practices that can address the issues of mathematics anxiety among pre-service teachers. Additionally, it will also facilitate pre-service teacher in self-assessment of their mathematics anxiety, in addressing their anxiety and breaking the cycle of math anxiety.

Taking into consideration, the recent trend of moving mathematics education from traditional teaching into the realm of a constructivist paradigm, National Council of Teachers of

### **Context of the Study**

The context of study is Education Department of Sukkur IBA. All students enrolled in B.Ed. for the Fall 2016 semester are the sample of study as these students are easily accessible and representative of the target audience. The courses of B.Ed. program provide teaching methodological preparation in two main areas; math and science (Physics, Biology and Chemistry). Student-teachers select their major subject according to their preference in which they want to enroll.

The students of B.Ed. program attended the class of mathematics course once per week for four hours. The students of B.Ed. program attend the class of mathematics course four hours per week. During the semester, the students must take part in microteaching and in field experience. Student-teacher required to practice teaching in 5 practicum course in which they in which they get opportunity to observe classroom teaching and to teach each of the subject areas in a public as well as in a private school setting. In first 2 practicum courses student-teachers teach ECE and junior section. Other 3 practicum courses require student-teacher to teach in class 6 to 10. Student-teachers are required to teach specific number of lesson covering subjects suggested by practicum supervisor.

## Literature Review

Kumari (2015) defined Math's anxiety as "a feeling of intense frustration or helplessness about one's ability to do Math and is an emotional reaction to Mathematics". According to Fulya (2008) it is a multidimensional structure and is knotted with the notion of fear, worry and tenseness. Whereas Williams (1988) views mathematics anxiety as leading factor to the experience of fear in the domain of cognitive and emotions while learning mathematics. It disturbs person emotionally and mentally.

Smith (1997) considers mathematics anxiety as a reason of multiple consequences which show fear of mathematics like; feeling discomfort while doing mathematics, skipping mathematics classes until the problem of attendance comes, feelings of sickness, dizziness, or fright, Failure to perform on a test, and, seeking help in mathematics from others also it does not work at all (As cited in Kumari, 2015) .

Spicer (2004) precisely defined mathematics anxiety is "an emotion that blocks a person's reasoning ability when confronted with a mathematical situation" . There can be many reason behind mathematics anxiety but the main reason can be the attitudes of teachers and the teaching pedagogy used by the teachers. Teachers also have mathematics anxiety that they transfer to students (Haralson, 2002). In 1998, Harper and Daane recognized anxiety in pre-service teachers when they faced challenge in teaching activities dealing with mathematics.(as cited in Allen, 2001). The cause of pre-service teachers' mathematics anxiety could be their school experiences, such as experiences of a mathematics student, and the effect of prior teachers, and of teacher training programs (Peker, 2009).

The math anxiety among pre service teachers is expressed by feeling of helplessness, insecurity and inferiority and these feelings can also need to math avoidance. (Dodd, 1992). Tobias recognized math avoidance as "a natural consequence of a set of attitudes that develop as a result of early educational experiences"(as cited in Shamoon, 2014). Kelly and Tom have viewed math avoidance among pre-service teachers is reluctance to attend required math courses class in college and looking for opportunity which do not require teaching mathematics (as cited in Allen, 2001, p. 21)

According to Trujillo and Hadfield, stated that somehow all of the pre-service teachers has mathematics anxiety, controlling these feelings of anxiety, all of the pre-service teachers planned the constructivist and developmental methods to teach mathematics which, they learned in their college mathematics methods classes in order to make mathematics meaningful to their own students(as cited in Peker, 2009, p. 336) . Whereas Tobias stated that the unfortunate experience with a math teacher could cause math anxiety among students too, hence it is necessary to address the math anxiety of pre-service teachers (as cited in Allen, 2001, p. 25)

As stated earlier, there is no fix definition of mathematics anxiety as it varies from person to person who is suffering from mathematics anxiety. On the contrary to it, there have been many identified sources that cause math anxiety. Some researchers have found that the cause of math anxiety stems from the tough nature of content, negative attitudes of teacher and traditional pedagogy, which ultimately results to avoidance to teach mathematics.

Past researches show that mathematics anxiety among student or student-teacher is due to their experience in their school. The way teacher teaches, the way school policies foster mathematics learning and the way teacher behave with students play very important role. Mostly elementary school mathematics experience develop confidence among student to learn mathematics as well

as it negatively impact students confidence which further develops math anxiety and avoidance to learn mathematics (Allen, 2001) .

According to Jackson and Leffingwell (1999) the teacher's hostile, insensitive and careless attitude , tough contents, gender bias, teacher expectation above the level of student capacity, communication and language barriers and quality of education. Whereas , Haralson (2002) stated that teacher mastery over the mathematics content, student's attitude towards mathematics, teacher behavior with students and teaching techniques used by teacher in mathematics classroom are the factors which causes mathematics anxiety. The following section provides the description of factors which causes mathematics anxiety according to past researches.

The major reason of math anxiety can be the pedagogical approach in which teacher explain mathematical content, provide time to student only for practice, students are not allowed to challenge any shared information by teacher , they are just required to sit in the class, and to memorize the process and important formulas of Mathematics (Steele & Arth, 1998). This type of teaching does not allow student to develop deeper understanding of mathematical content and negatively impact on student views about mathematics and creates mathematics anxiety. Finlayson (2014) in the study of "*Addressing math anxiety in the classroom*" states that use of traditional method in teaching mathematics causes mathematics anxiety. As traditional teaching is teacher-centered, teacher has autonomy over classroom instruction while student are just like blank slate they are required to listen to teacher and obey instruction of teacher without questioning.

Moreover, Geist (2010) identified a problem in the policies protocol of the school system which pressurize teacher to cover content with in the specific amount of time in academic year, that causes students to do rote memorization to just pass the subject and it also creates mathematics anxiety. This type of learning which only promotes memorization does not fulfill the requirement of each student, as it does not allow differentiate instruction in the classroom. Hence it negatively impact on mathematical learning of student and develop mathematics anxiety (Sloan, Daane, & Giesen, 2002). The rationale behind traditional learning of mathematics, which only promotes practice of process and memorization of rules and formulas, can be the teacher who already has mathematics anxiety from his or her past learning experience. That is why it is very much authentic to say that the attitude of teacher about subject also influences the pedagogy of teacher (Karp, 1991).

Mathematics anxiety can be caused by many factors, similarly to the factors of mathematics anxiety it also has many affects which individual face while suffering from mathematics anxiety. The negative effects of mathematic anxiety can be the avoidance of mathematics courses, decrease in mathematics achievement or test score, not selecting mathematics as a major subject, and feeling wrong like guilty or embarrassed about poor performance in mathematics (Tobias, 1993) Whereas in educational settings, mathematics anxiety affects school related activities of a student like normal classroom activities and score of standardized test. So, it very much correct to say that, mathematics anxiety of individual made him or her to avoid such courses or subject which has mathematics or mathematics relating content. Similarly, mathematics anxious individual does not have capacity to build or improve mathematics

competence or mastery over manipulating with numbers and abstracts concepts and it directly influence individual performance of mathematics in a negative way (Adeyemi, 2015)

### **Methodology**

Keep in view the topic and question of present research the mixed methods approach was employed. The rationale of merging two types method; quantitative and qualitative, was that it provides opportunity to analyze the nature of mathematics anxiety of student-teachers in details and makes sure full participation of target audience.

The quantitative data were gathered through surveys while the qualitative data collected through interviews to help elaborate on the quantitative data .

### **Participant**

To get data for quantitative analysis, this study involved 50 student-teacher of Education Department of Sukkur IBA. For qualitative analysis, interviews were taking from 5 student-teachers. The participants were randomly selected.

### **Data Collection and Analysis**

#### *Questionnaire*

To collect quantitative data, questionnaire was used that was completed by 50 student-teachers through an online survey. The questionnaire for survey has two sections. First section was about demographic information of student-teachers, it was about information of Gender, Semester, major subject, total CGPA, CGPA in Mathematics subject, and score of mathematics in matriculation of B.Ed students. Second section was based on five measuring scale; Revised Mathematics Anxiety Scale (RMAS) Content Experience Scale (CES) Teacher Experience Scale (TES) Pedagogy Experience Scale (PES) Math Avoidance Scale (MAS) developed by David S. Allen (2001) in the study entitled as "*Mathematics Experience: contributing factors to the math anxiety and avoidance behaviors of female elementary school pre-service teachers*". From each measuring scale 4 items: including positive and negative statements were selected and modified by researcher (See Appendix I). Items responses were recorded on a 5-point Likert scale. In effort to address the hypothesis, analysis was done in percentages to identify relationships between the five constructs represented by the instrument.

#### *Interview*

Interviews were used to obtain the detailed further information about mathematics anxiety of student-teacher which led to avoidance to teach mathematics. A semi-structured interview was developed based on mathematics anxiety, teacher attitudes in mathematics class, pedagogical experience in mathematics class, content experience, and avoidance to teach mathematics (See Appendix II). Interview was conducted with five student-teachers who completed online questionnaire. Eight questions of interview were related to the students' feelings about mathematics and their views about mathematics anxiety like what can be the reason behind their mathematics anxiety. Each student-teacher participated in an individual interview lasted approximately thirty minutes. All interviews were audio taped with the permission of participants and interviewees' records were transcribed for coding purpose. The interview data were analyzed using thematic approach which includes tape record interviews- transcribe - making themes- meaning making.

## Findings and Discussions

### Questionnaire

The analysis of result has been interpreted in following sections. The results of demographic information section of questionnaire showed that out of 50 respondents 22 were male whereas 28 were female. The average of respondents was between 21-23 years. The frequency students studying semester is presented below Table 1.

Table 1

Semester	Number of Students
2	4
4	14
5	10
6	11
8	11

The following tables represent the results of the study variables wise. The higher the percentage means that the higher the student measured in the specific area. For example, a high score in Mathematics Anxiety means that the student has a high level of math anxiety.

Table 2

### Mathematics Anxiety Scale

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I have usually been at ease during math courses.	20%	30%	26%	18%	6%
2. I usually don't worry about my ability to solve math problems.	22%	50%	16%	6%	6%
3. Mathematics makes me feel uneasy and confused.	8%	12%	24%	36%	20%
4. Mathematics makes me feel uncomfortable and nervous.	8%	12%	14%	46%	20%

The first statement was asked to find out the mathematics anxiety of student-teacher. I came to know that majority of them disagree (30%) during the time (26%) of student-teacher were quick witted and student-teacher strongly disagreed (20%) while student-teacher agreed (18%) and strongly agreed pupil (6%). The responses clearly show that great number of student-teacher disagree at being ease during math courses. The second question was asked to interpret student-teacher's speculations regarding their capability to solve various math problems. I came to know that most of the respondents disagree (50%) strongly disagree (22%) whereas neutral (16%) agree (6%) and strongly agree (6%). The responses highlight that majority of the student-teacher disagree on not being worried to solve math problems. In third statement Majority of student-teacher (36%) agree that mathematics makes them feel agitated followed by the neutrals (24%)



strongly agree (20%) while student-teacher who disagree (12%) and strongly disagree (8%). This indicates a clear screen that most of the student-teacher are confused while solving math or understanding it. Getting into further analysis most of the student-teacher agree (46%) strongly agreed (20%) neutral (14%) disagree (12%) and strongly disagree (8%) that mathematics makes learners discontented and anguish. From table 2 student-teacher's responses show there exist mathematics anxiety among student-teachers.

Table 3

### Content Experience

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. New math content has usually been easy for me to understand.	22%	34%	20%	16%	8%
2. When I had trouble with a mathematics concept I usually gave up and quit trying.	18%	20%	12%	30%	20%
3. I generally have had difficulty relating new mathematical concepts to those I had previously learned.	4%	22%	16%	42%	16%
4. I was frequently lost and had trouble learning in my math classes.	8%	16%	10%	40%	26%

The first question from CES was asked to understand various factors related with content which causes mathematics anxiety. The results indicate that (34%) of them disagree (22%) strongly disagree; whereas neutral (20%) agree (16%) followed by strongly agree (8%). Greater part of student-teacher disagrees to notions that new math content is easy to understand for them. Getting further into the analysis of math anxiety due to content, I came to know that mass of student-teacher agrees (30%) strongly agree (20%) although neutral (12%) disagree (20%) and disagree (18%) of that, they face difficulty in learning mathematics concepts and end up quitting. The third question was asked to know about the whereabouts of math, where learners lack in concept building. I found that student-teachers agree (42%) strongly agree (16%) student-teachers neutral (16%) disagree (22%) and strongly disagree (4%). I came to know that majority of student-teachers lack in conceptual learning of mathematics. From further analysis of student-teacher, the last question was asked to know who were periodically confused and faced great difficulty in building up with new concepts of math in the scheduled classes. The results were (40%) of student-teachers agree (26%) strongly agree (10%) are the quick wits and below average (16%) disagree and (8%) strongly disagree. Table 3 shows that content also play major role in developing mathematics anxiety.

Table 4

**Teacher Experience**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My math teachers were supportive in my efforts to learn mathematics.	16%	40%	8%	40%	16%
2. My teachers spent the necessary amount of time helping me to understand math concepts.	22%	30%	8%	28%	12%
3. I did not feel comfortable seeking help from my math teachers outside of class.	2%	28%	18%	30%	22%
4. My mathematics teachers usually became frustrated with me.	20%	30%	10%	22%	18%

In the first statement of TES, majority of the student-teacher disagree (40%) strongly disagree (16%) neutral (8%) followed by student-teacher who agree (22%) and strongly agree (14%). I can see numerous amount of student-teacher disagree the way learners pay attention and work their math problems with their masters. The finding of second statement shows that the teacher interaction with students, I see (30%) of student-teacher disagree (28%) agree (22%) strongly disagree (12%) strongly agree followed by neutrals (8%). I get the response of student-teachers disagree in majority which states efficient time is not given to the learners for their better concept building by the teachers. The third statement was asked with the intention to understand whether an individual has comfort level or suitability with his math teacher. I saw that (30%) of student-teacher agree while (22%) strongly agree followed by (28%) disagree, during time (18%) student-teachers who think it is suitable and (2%) strongly disagree. Greater number of student-teachers are usually uncomfortable with their math teachers and leads to misconceptions. The last statement was about the rational perceptions of individuals regarding math teacher. (30%) disagree (22%) strongly disagree (20%) while strongly agree (18%) and neutral were (10%) only. I saw that majority of the student-teacher disagree on the fact of teachers being in an anguish or frustrated state to the learners as compare to Table 4 shows that teacher attitude is more responsible for development mathematics anxiety than content.

Table 5

**Pedagogical Experience Scale**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My teachers emphasized understanding and not just memorization of facts and procedure.	22%	28%	12%	24%	14%
2. My teachers used a combination of manipulative, visual aids, games, and real life examples in teaching mathematics.	24%	42%	14%	14%	6%
3. During my math classes I was expected to sit quietly and listen.	6%	14%	22%	32%	26%
4. My mathematics teachers used only chalk and talk method as to present mathematical content.	4%	14%	18%	36%	28%

The first statement of PES was asked with the intention to understand pedagogical experience of student-teachers in mathematics classroom. Particularly this item was asked to whether a teacher explains or misguides a student or not. Well (28%) of student-teachers disagree (24%) agree whereas (22%) strongly disagree (12%) neutrals and (14%) of student-teachers strongly agree. The results show that that majority of student-teachers disagree it showing a negative response to the above-mentioned question. The second statement deals with the combination of visual learning which is said to be more affective for the learners. Student-teachers (42%) disagree (24%) strongly disagree whereas (14%) agree and neutral (14%) and strongly agree (6%). Large numbers of student-teachers disagree to the question mentioned above. In third statement majority of the respondents agree (32%) strongly agree (26%) neutral (22%) disagree (14%) and strongly disagree (6%). I came to know that large number of student teachers agree to the learning environment based on the conceptual values of learning according to traditional approach of learning. Also in last statement majority of respondents (44%) agree followed by (28%) strongly agree, while (18%) neutral and (10%) disagree. I can see that great number of student-teachers agree to the chalk and talk method mathematic teachers used to use for mathematical content. Table 5 shows that student-teachers have traditional pedagogical experience in mathematics classroom which is develop mathematics anxiety in them more than content and teacher's attitude.

Table 6

**Math Avoidance Scale**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I look forward to teach mathematics in my future teaching career.	22%	26%	18%	14%	20%
2. I usually take part in mathematical competitions.	22%	38%	12%	18%	10%
3. I have often helped others with their math homework.	14%	14%	24%	34%	14%
4. I have dropped math courses because they became too difficult.	36%	24%	4%	20%	16%

The first statement of MAS was about different possibilities of an individual can achieve and conquer in mathematics. Student-teacher disagree (26%) strongly disagree (22%) strongly agree (20%) although neutral (18%) and agree (14%). This shows a prominent response of learners disagree in majority to their interests in future math teaching career. The second statement was asked to know about the student-teacher's active curriculum participation in mathematics. (38%) pupil disagree (22%) strongly disagree (18%) agree (12%) are neutral and followed by student-teachers strongly agree (10%). Majority of student-teacher lacks active participations in mathematics.

Getting into further analysis of mathematics avoidance behavior of student-teachers, I can see that (14%) strongly agree (34%) agree (24%) neutrals (14%) disagree (14%) strongly disagree, on helping other fellow mates in their homework. Majority of learners help each other out with math problems. Numerous number of student-teachers (36%) strongly disagree (24%) disagree (4%) neutral (20%) agree (16%) strongly agree. The results show majority of student-teachers strongly disagree to the fact to step up to such an absurd act; they have struggled well in order to complete their required courses of mathematics. Table 6 shows student-teacher's behavior towards mathematics. Though student-teachers have completed their mathematics courses but they disagree to teach mathematics course in future.

**Analysis of Interviews**

5 students - teachers (2 males and 3 females) who completed the questionnaire volunteered to participate in semi-structured interviews. The interviews took approximately 30 minutes each and consent was obtained to record the interviews.

From the finding of interviews, I found that 4 out 5 interviewees have mathematics anxiety and they dislike mathematics. The student-teacher shared the following reasons for their dislike towards mathematics: they think mathematics concept is very tough to understand because they could not apply learnt concept of mathematics in their daily life and they had traditional learning experience in mathematics class. The behavior of the mathematics teacher and the traditional

pedagogies used by teacher were seen a s common cause for feeling of uneasiness in mathematics classroom

Some examples of responses from the students during the interviews are the following:

*“Teacher is responsible for these feelings because it is the responsibility of the teacher to teach in a way that people don’t get bored”.*

*“I think I am slow learner because I cannot understand word problems. Because every word problem has separate pattern, teacher focus on process. I do practice process but there is no any single pattern to solve all kind of mathematics word problem. And teachers only use traditional approach of teaching.”*

All participants had very traditional learning experience in their school. They shared that their teachers only used chalk and talk method and focuses on procedural knowledge. One of the participants shared the experience of learning in which teacher did not connect the student previous learning.

3 out of 5 participants consider teacher behavior as main factors of their mathematics anxiety. One participant responded to this question in following way

*I have different experience. The teacher of first mathematics course was very humble during my struggle in solving mathematics problem. Whereas, teacher of second course always pointed out weak student by suggesting them to give help form tutor. He usually did not take care of weak student. He just paid attention to extra ordinary student in mathematics even he ignored weak one. Even he did not talk to weak students.*

The participant’s perceptions about mathematical content were very much positive. Further the impact of mathematics anxiety on their personal and professional lives was explored. The findings of interview suggested that the main factors behind the mathematics anxiety of student-teacher were teacher behavior and pedagogical experience. Student-teachers who had mathematics anxiety also showed avoidance to teach mathematics. Following n the response of one participant which is highlighting mathematics avoidance

*“It has affected me very much. I got 2 f in mathematics subjects. Because of this my whole learning process is affected. Especially my motivation and feelings are very much affected. I will not teacher mathematics in my future because I’m not comfortable with mathematics. I have mathematics anxiety. And I don’t want to transfer my mathematics anxiety to other students”.*

When the suggestions to reduce mathematic anxiety were asked from participants, They all give suggestions to teacher to develop learner centered class in the classroom and take care of students level while teaching mathematics.

### Conclusion and Recommendation

The finding this research suggested that math anxiety existed among the student-teacher of Sindh Pakistan. The results of this study support the contention that math anxiety is related to negative mathematics classroom experience like behavior of mathematics teaches and style of teaching. Most of the student-teachers considered the reason of dislike towards mathematics is the mathematics teachers and teaching methodology. Student-teacher having mathematics anxiety also identified instances of, being "lost" in class, due to being passive in the classroom as teachers just only promotes memorization. Experiences identified with the teacher had a moderate relationship to math anxiety. This study suggests that the behavior of teachers and classroom instruction are more closely related to their development of mathematics anxiety among student-teachers. Allen (2001) also suggested that teacher of mathematics must focus on teaching pedagogy which promotes sound understanding of mathematics and avoid development of mathematics anxiety.

Based on this study, mathematics content identified is not as strongly related to math anxiety as the literature review would suggest. For instance, According to Jackson & Leffingwell(1999) , mathematics content is almost abstract students cannot interact with mathematics content with their five sense as it all about mental imagination or consideration and the abstract nature of mathematics creates anxiety of mathematics among students.

Furthermore, mathematics anxiety was also found to be strongly correlated to math avoidance behavior. As research suggested that student-teachers with mathematics anxiety lack understanding of mathematics concepts, they are likely to show avoidance to teach mathematics and may not be able to facilitate students in development of deeper understanding of the subject (Adeyemi, 2015)

This study recommends that there is need of efforts to decrease or eradicate mathematics anxiety among student- teachers. The student- teachers, and teacher educators and researchers, all should work together to support student-teachers in decreasing mathematics anxiety by providing programs and workshops that provide student- teachers awareness about their mathematics anxiety and help them to overcome their negative attitudes about mathematics. In future, It will also help student-teachers to understand the causes, symptoms and remedies to decrease math anxiety of their student.

Literature also suggested that teachers with mathematics anxiety transmitter their anxiety to student during the process of teaching and learning. Hence it is very much important for student-teachers to be aware of the nature of their mathematics anxiety. Further, there is recommendation for student-teacher who will teach mathematics in their future, that during the B.Ed program they should develop their Pedagogical Content Knowledge about mathematics which help them to create learner-centered classroom.

In conclusion, teacher positive attitudes toward mathematics and relationship with student play important role in developing student positive attitudes toward mathematics. Hence student-teacher must apply few self-directed techniques to reduce their anxiety, because anxiety is nothing but fear and everyone has capacity to overcome the fear.

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