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Prospective teachers beliefs about teaching and learning in the state of Goa

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***Abstract*---**In this study pedagogical beliefs of student-teachers at three colleges in Goa state are examined. Data was collected by means of a questionnaire constructed by the researcher had been pilot tested. The underlined hypotheses were derived through the use of SPSS and ADANCO software. The theory of cognitivism is applied to analyse the beliefs of student-teacher. There is no gender dispersion, however certain teaching and pedagogical beliefs vary depending on the geographical background of the student-teachers. The beliefs of these student-teachers are influenced by their economic conditions. Study results demonstrated that students could learn more effectively by asking questions rather than just listening to their teachers. It is more likely that instructors believe in asking questions in teaching than in silent classroom. The study concluded that many teaching beliefs reflect characteristics of teachers before entering the profession, and at least some of these beliefs have socioeconomic antecedents.

***Keywords*---**pedagogical beliefs, student-teachers, locality students, teaching subjects, cognitivism theory, Goa state.

Introduction

Human behaviour and learning are impacted by beliefs (Ajzen, 1988; Ajzen & Fishbein, 1975). In their respective studies, Breen (2001) and Bernat and Gvozdenko (2005) have argued that the attitudes, beliefs, and perceptions that learners bring with them to a given learning situation are important to the process of learning. Language learners have distinct beliefs about the nature of language, how language is acquired, the effectiveness of learning strategies, and whether or not aptitude exists. Furthermore, students have a set of expectations

about how they will succeed and how the teaching process will work. In order to design syllabus and to effectively teach language, it is necessary for teachers to recognize these beliefs and their effects on language learning and teaching.

The teaching practices of teachers are strongly influenced by their beliefs. Teachers' beliefs determine what they do, argue Nation and Macalister (2016) and Amiryousefi (2015). Teachers' beliefs about learning languages will have a greater impact on their classroom activities than any method they are told to use. Williams & Burden (1997) declared the same thing. The practices of teachers indicate their beliefs about language teaching and learning, according to Kagan (1992). An important aspect of language teaching and learning is understanding teachers' views on certain topics. The learning process will enhance if teachers and learners agree on their beliefs. Teachers need to improve their knowledge and skills, and teachers' beliefs will play an influential role in teaching. The main purpose of this study is to explore themes related to teachers' beliefs in order to better understand how teachers' beliefs can help student-teachers become better teachers.

Based on the viewpoints of Mansour (2008) and Richards (1998), the beliefs of teachers are of the greatest value to a teacher's psychological composition. Considering the difficulty of defining the concept of teachers' beliefs due to the conflicting views of researchers and intellectuals, Tatto & Coupland (2003) postulate that defining the concept of teachers' beliefs is urgent. concept that entails our understanding of all phenomena about which we have insufficient knowledge, but are confident to work on. The beliefs that teachers have about teaching and learning are defined by Haney, Lumpe, and Czerniak (1996) as the teachers' contentions and viewpoints. In contrast, Ghaith (2004) argues that teachers' beliefs make up a holistic picture of notions regarding education, teaching, curricula, and the teaching profession in general, and these conceptions are reflected in the "education culture" which has an impact on pedagogical objectives and values.

Reviewing the previous definitions, it is opined that teachers' beliefs reflect their psychological and mental content. These beliefs have a substantial influence on the manner in which they teach. Upon investigating the beliefs of the teachers in relation to their personalities, it is ascertained that some research describes these beliefs as solid and unchanging, which act as a barrier to any development of learning as well as hindering changes in teaching practices (Pajares, 1992; Fullan & Hargreaves, 1991).

Similarly, Cronin-Jones (1991) identified four major categories of teacher beliefs that have a significant influence on the implementation of curricula in classrooms. In addition to beliefs about how students acquire knowledge, beliefs about a student's ability in a specific age group, and beliefs about the relative importance of content are also included. It is obvious for individual to make mistake in assessing the factors that affect their behaviour if they are not able or unwilling to describe their beliefs accurately. While teachers' practices in the classrooms are affected by their beliefs, Mansour (2008) points out that more research is needed to clarify how teachers' beliefs affect their practices. To understand the factors affecting teachers' classroom practices, there is a

growing need to study the beliefs of the teachers in the social studies discipline.The previous studies have not focussed on student-teachers' beliefs from various disciplines. It may be possible to identify the beliefs of student-teachers of social studies so that they may better understand the factors influence their classroom practices, which may help to design a practical framework to teach their students and contribute more classroom engagement. It is therefore investigated the teaching and pedagogical beliefs of student-teachers and the degree to which their classroom practices reflect these beliefs, in addition with revealing the relationship between the ideology to become a good teacher in the classroom.

Methodology

Objectives

Following are the objectives of the study.

- To study student-teachers' pedagogical beliefs about the way the content to be taught.
- To determine teacher student beliefs about classroom practices.
- To determine the relationship of teaching learning beliefs found in the student-teacher.
- To determine the effects of teaching on teaching and pedagogical beliefs.
- To examine the impacts of teaching on teaching and pedagogical beliefs.

Hypotheses

Following are the hypotheses of this research study.

- There is no significant relationship of teaching if teacher addresses the problem correctly.
- There is no significant relationship of teaching with students learn more effectively if teacher ask questions instead of just listening to the teacher by the student.
- (3) There is no significant relationship of teaching with students learn best when they solve problems on their own.
- There is no significant relationship of teaching with the process of thinking and reasoning than teaching specific curriculum content study.

Methodology

Since the study discloses the teaching and pedagogical beliefs of student-teachers' various Teacher Education Institutes in the State of Goa were selected for the present study. This study is based on the descriptive research design. The researcher examined the teaching and pedagogical beliefs that student- teachers should hold in classroom teaching using the survey research methodology. Specifically, this study measures the degree of teaching and pedagogical beliefs that the student teacher holds on the scale used in the current study. Data was

collected through pilot tested self-constructed questionnaire from the student-teachers.

Study Sample

The data was collected from 300 teacher students at three different education colleges located in the State of Goa. This study involved 20 male and 280 female student-teachers. A probabilistic simple random sampling method was used to select the samples from three different colleges of Goa state.

Study Tool

Referring the tools used by various researchers in the previous studies and writing a literature review, the researcher has developed a Pedagogical Belief Inventory to uncover the teaching and pedagogical beliefs among student-teachers in the State of Goa. In this tool, respondents were asked questions about their socioeconomic background and beliefs about teaching and learning. Teaching and learning and beliefs were measured using the same tool.

Reliability of the Tool

Student-teachers from three Techer Education Institutes in Goa were considered to measure beliefs of teaching and pedagogical beliefs. According to Table No.1, Cronbach's alpha formula for internal consistency values on the entire questionnaire and the seven domains of the questionnaire was used to verify the reliability of the twenty-eight domains of the questionnaire as a research tool. The value of Cronbach's Alpha is 0.897, which shows level of inventory proved to be 'Good' for further data collection.

Table No.1: Cronbach's Alpha test of Teaching and Pedagogical Beliefs

N	Crobbach's Alpa	No. of items
300	0.897	28

Statistical Treatment

For identifying degrees of teaching and pedagogical beliefs among student-teachers, several statistical tests are used, including mean, percentage, cross tabulations, and Chi-Square. The data was analysed with SPSS version 22.6.

Theoretical Intervention

For the present study Cognitivism theory was used to describe the teaching and pedagogical beliefs among the student-teachers. Wolfgang Kohler of Germany developed cognitive theories in the early 1900s from Gestalt psychology. An information processing approach emphasizes that students process information rather than simply responding to stimuli, as with behavioural approaches. Cognitivists think that the mind is the place where problem-solving and thinking take place. It is through active participation and building on prior knowledge that learners learn. There is a possibility that learners' behaviours

change, but this is only an indication of what is happening inside their heads i.e. beliefs. Knowledge is gained by incorporating information, processing it, and remembering it.

Results and Discussion

Table No. 2: Responses of Teacher Students with The Relevance of Gender with Teacher Learning Beliefs

Responses		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
Gender	A) Effective/good teachers demonstrate how to address the problem correctly						
Male	Count	7	8	5	0	0	20
	% within Gender	35.0%	40.0%	25.0%	0.0%	0.0%	100.0%
	% of Total	2.3%	2.7%	1.7%	0.0%	0.0%	6.7%
Female	Count	82	162	29	5	2	280
	% within Gender	29.3%	57.9%	10.4%	1.8%	0.7%	100.0%
	% of Total	27.3%	54.0%	9.7%	1.7%	0.7%	93.3%
Total	Count	89	170	34	5	2	300
	% of Total	29.7%	56.7%	11.3%	1.7%	0.7%	100.0%
Gender	B) Students learn more effectively when they ask questions instead of just listening to the teacher.						
Male	Count	5	8	7	0	0	20
	% within Gender	25.0%	40.0%	35.0%	0.0%	0.0%	100.0%
	% of Total	1.7%	2.7%	2.3%	0.0%	0.0%	6.7%
Female	Count	78	164	37	1	0	280
	% within Gender	27.9%	58.6%	13.2%	.4%	0.0%	100.0%
	% of Total	26.0%	54.7%	12.3%	.3%	0.0%	93.3%
Total	Count	83	172	44	1	0	300
	% of Total	27.7%	57.3%	14.7%	.3%	0.0%	100.0%
Gender	C) Students learn best when they solve problems on their own.						
Male	Count	15	3	2	0	0	20
	% within Gender	75.0%	15.0%	10.0%	0.0%	0.0%	100.0%
	% of Total	5.0%	1.0%	0.7%	0.0%	0.0%	6.7%
Female	Count	196	76	8	0	0	280
	% within Gender	70.0%	27.1%	2.9.0%	0.0%	0.0%	100.0%
	% of Total	65.3%	25.3%	13.0%	0.0%	0.0%	93.3%
Total	Count	211	79	10	0	0	300
	% of Total	70.3%	26.3%	3.4%	0.0%	0.0%	100.0%
	D) The process of thinking and reasoning are more important than specific curriculum content						
Male	Count	3	6	9	2	0	20
	% within	15.0%	30.0%	45.0%	10.0%	.0%	100.0%

	Gender						
	% of Total	1.0%	2.0%	3.0%	.7%	.0%	6.7%
Female	Count	48	126	89	10	7	280
	% within Gender	17.1%	45.0%	31.8%	3.6%	2.5%	100.0%
	% of Total	16.0%	42.0%	29.7%	3.3%	2.3%	93.3%
Total	Count	51	132	98	12	7	300
	% of Total	17.0%	44.0%	32.7%	4.0%	2.3%	100.0%

The purpose of the above table number 2 is to compare the results of male and female teacher students on core issues regarding pedagogy and pedagogical beliefs, such as whether the effectiveness of a teacher's teaching in the classroom is more efficient at solving problems, whether students learn more effectively by asking questions, whether students learn more efficiently by solving their own problems, and whether students' thinking and reasoning are more valuable than a textbook. Observations reveal that both male and female student- teachers express agreement with the statement 'Effective/good teachers demonstrate how to solve problems successfully'. Around 35% of male and 29.3% of female teacher students have 'Strongly Agreed'; 40% male and 57.9% female teacher students 'Agreed' that effective/good teachers demonstrate how to address the problems correctly. On the other hand, only 2.5% of female respondents are not convinced with the above proposition. When asked about the concept that students learn better when they ask questions as opposed than just listening to the teacher, 25 % of the male respondents 'Strongly Agreed,' 40% 'Agreed,' while 58.6 % of the female respondents said 'Agree'. Nevertheless, very few respondents rejected this belief. The responses of teacher students focused on the following beliefs: students learn best by solving problems independently. Almost 75% of male respondents, and 70% of female respondents, indicated they 'Strongly Agree', and none of them rejected this belief before becoming teachers. It is evident from the responses of the teacher students as to whether they admire the statement "The process of thinking and reasoning is more important than specific curriculum content" or not. Both males and females were equally inclined to admire this statement. Among men and women, 10% responded 'Disagreed' and 3.6% marked 'Strongly Disagree'. There is no clear delineation between teaching and pedagogy, therefore this study will explore this. Teacher students which possess different teaching and pedagogical beliefs on classes teaching was due their acknowledgement and influences (Jordan, 2013)

Table No. 3: Responses of Teacher Students with The Relevance of Locality with Teacher Learning Beliefs

Responses		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
	A) Effective/good teachers demonstrate how to address the problem correctly						
Urban	Count	41	51	4	0	0	96
	% within Geographical background	42.7%	53.1%	4.2%	.0%	.0%	100.0%
	% of Total	13.7%	17.0%	1.3%	.0%	.0%	32.0%

Rural	Count	48	119	28	5	2	202
	% within Geographical background	23.8%	58.9%	13.9%	2.5%	1.0%	100.0%
	% of Total	16.0%	39.7%	9.3%	1.7%	.7%	67.3%
Tribal	Count	0	0	2	0	0	2
	% within Geographical background	.0%	.0%	100.0%	.0%	.0%	100.0%
	% of Total	.0%	.0%	.7%	.0%	.0%	.7%
Total	Count	89	170	34	5	2	300
	% of Total	29.7%	56.7%	11.3%	1.7%	.7%	100.0%
	B) Students learn more effectively when they ask questions instead of just listening to the teacher.						
Urban	Count	28	55	13	0	0	96
	% within Geographical background	29.2%	57.3%	13.5%	.0%	.0%	100.0%
	% of Total	9.3%	18.3%	4.3%	.0%	.0%	32.0%
Rural	Count	55	117	29	1	0	202
	% within Geographical background	27.2%	57.9%	14.4%	.5%	.0%	100.0%
	% of Total	18.3%	39.0%	9.7%	.3%	.0%	67.3%
Tribal	Count	0	0	2	0	0	2
	% within Geographical background	.0%	.0%	100.0%	.0%	.0%	100.0%
	% of Total	.0%	.0%	.7%	.0%	.0%	.7%
Total	Count	83	172	44	1	0	300
	% of Total	27.7%	57.3%	14.7%	.3%	.0%	100.0%
	C) Students learn best when they solve problems on their own.						
Urban	Count	72	24	0	0	0	96
	% within Geographical background	75.0%	25.0%	.0%	.0%	.0%	100.0%
	% of Total	24.0%	8.0%	.0%	.0%	.0%	32.0%
Rural	Count	137	55	10	0	0	202
	% within Geographical background	67.8%	27.2%	5.0%	.0%	.0%	100.0%
	% of Total	45.7%	18.3%	3.3%	.0%	.0%	67.3%
Tribal	Count	2	0	0	0	0	2
	% within Geographical background	100.0%	.0%	.0%	.0%	.0%	100.0%
	% of Total	.7%	.0%	.0%	.0%	.0%	.7%
Total	Count	211	79	10	0	0	300
	% of Total	70.3%	26.3%	3.3%	.0%	.0%	100.0%

	D) The process of thinking and reasoning are more important than specific curriculum content						
Urban	Count	19	28	38	9	2	96
	% within Geographical background	19.8%	29.2%	39.6%	9.4%	2.1%	100.0%
	% of Total	6.3%	9.3%	12.7%	3.0%	.7%	32.0%
Rural	Count	32	102	60	3	5	202
	% within Geographical background	15.8%	50.5%	29.7%	1.5%	2.5%	100.0%
	% of Total	10.7%	34.0%	20.0%	1.0%	1.7%	67.3%
Tribal	Count	0	2	0	0	0	2
	% within Geographical background	.0%	100.0%	.0%	.0%	.0%	100.0%
	% of Total	.0%	.7%	.0%	.0%	.0%	.7%
Total	Count	51	132	98	12	7	300
	% of Total	17.0%	44.0%	32.7%	4.0%	2.3%	100.0%

Pedagogical and teaching beliefs may differ depending on geographical location. According to their locality, the third table above provides information on teacher students. In the urban areas, 42.7% and 53.7% of teacher students mark their beliefs as 'Strongly Agree' and 'Agree', in the rural areas, 23.8% and 58.9% mark their beliefs as 'Agree', and all tribal area student-teachers mark their beliefs as 'Undecided' for how effective/good teachers address the issue. Regarding the belief that students learn more effectively when they ask questions rather than just listen to the teacher, 29.2% of urban teacher students strongly agree with this, 56.2% agree with it, while 27.2% strongly agree with it, 56.3% agree with it, and all tribal teacher students strongly disagree with it. Moreover, the opinion of teacher students on the belief 'Students learn best when they solve problems for themselves' showed that 75% 'Strongly Agreed', 25% 'Agreed', and under rural student-teachers 67.8% 'Strongly Agreed', 27.2% 'Agreed' and 5% responded 'Undecided'. Furthermore, for tribal students here all are 'Strongly Agree'. Among urban teacher students, 19.8% strongly agreed with the statement that 'A process of reasoning and thinking is more important than specific curriculum content', 29.2% agreed, 39.6% agreed, 9.4% disagreed, and 2.1% strongly disagreed. According to rural respondents, 15.8% agreed 'Strongly', 50.5% agreed 'Agree', 29.7% disagreed, 1.5% disagreed, and 2.5% disagreed 'Strongly' and all tribal respondents said 'Agree'. Amongst all more disagreement was seen in the belief 'The process of thinking and reasoning is more important than specific curriculum content'. As a result of the difference in their locality, urban and rural students responded differently, resulting in greater agreement on beliefs. The thought process of teacher students to become teachers in schools differs because of cosmopolitan influences. The teachers in rural areas are generally known to be disciplined, masterful and good at learning processes compared to those in urban schools (Catherine & Chen, 2013). However, results of the present article corresponding with the studies by Knoblauch, D., & Hoy, A. W. (2008) and Knoblauch, D., & Chase, M. A. (2015).

Table No. 4: Responses of Student- Teachers with The Relevance of Their Monthly Family Income with Teacher Learning Beliefs

Responses		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
	A) Effective/good teachers demonstrate how to address the problem correctly						
>Rs.20,000	Count	41	70	15	1	0	127
	% within collective monthly family income	32.3%	55.1%	11.8%	0.8%	0.0%	100.0%
	% of Total	13.7%	23.3%	5.0%	0.3%	0.0%	42.3%
Rs. 21,000-Rs. 50,000	Count	15	46	12	4	0	77
	% within collective monthly family income	19.5%	59.7%	15.6%	5.2%	.0%	100.0%
	% of Total	5.0%	15.3%	4.0%	1.3%	.0%	25.7%
Rs.51,000-Rs.70,000	Count	12	25	0	0	2	39
	% within collective monthly family income	30.8%	64.1%	0.0%	0.0%	5.1%	100.0%
	% of Total	4.0%	8.3%	0.0%	0.0%	.7%	13.0%
Rs.71,000 – Rs.1,00,000	Count	8	18	0	0	0	26
	% within collective monthly family income	30.8%	69.2%	0.0%	0.0%	0.0%	100.0%
	% of Total	2.7%	6.0%	0.0%	0.0%	0.0%	8.7%
<Rs.1,00,000	Count	13	11	7	0	0	31
	% within collective monthly family income	41.90%	35.50 %	22.60%	0.00%	0.00%	100.00 %

	% of Total	4.30%	3.70%	2.30%	0.00%	0.00%	10.30%
Total	Count	89	170	34	5	2	300
	% of Total	29.70%	56.70 %	11.30%	1.70%	0.70%	100.00 %
	B) Students learn more effectively when they ask questions instead of just listening to the teacher.						
>Rs.20,000	Count	25	88	14	0	0	127
	% within collective monthly family income	19.7%	69.3%	11.0%	0.0%	0.0%	100.0%
	% of Total	8.3%	29.3%	4.7%	0.0%	0.0%	42.3%
Rs. 21,000-Rs. 50,000	Count	22	40	15	0	0	77
	% within collective monthly family income	28.6%	51.9%	19.5%	0.0%	0.0%	100.0%
	% of Total	7.3%	13.3%	5.0%	0.0%	0.0%	25.7%
Rs.51,000-Rs.70,000	Count	16	17	6	0	0	39
	% within collective monthly family income	41.0%	43.6%	15.4%	0.0%	0.0%	100.0%
	% of Total	5.3%	5.7%	2.0%	0.0%	0.0%	13.0%
Rs.71,000-Rs.1,00,000	Count	10	14	6	1	0	31
	% within collective monthly family income	32.30%	45.20 %	19.40%	3.20%	0.0%	100.00 %
	% of Total	3.3%	4.3%	1.0%	0.0%	0.0%	8.7%
< Rs.1,01,000	Count	10	14	6	1	31	10
	% within collective monthly family income	32.30%	45.20 %	19.40%	3.20%	100.00%	32.30%

	% of Total	3.30%	4.70%	2.00%	0.30%	10.30%	3.30%
Total	Count	83	172	44	1	0	300
	% of Total	27.70%	57.30 %	14.70%	0.30%	0.0%	100.00 %
	C) Students learn best when they solve problems on their own.						
>Rs.20,000	Count	85	36	6	0	0	127
	% within collective monthly family income	66.9%	28.3%	4.7%	0.0%	0.0%	100.0%
	% of Total	28.3%	12.0%	2.0%	0.0%	0.0%	42.3%
Rs. 21,000- Rs. 50,000	Count	58	19	0	0	0	77
	% within collective monthly family income	75.3%	24.7%	0.0%	0.0%	0.0%	100.0%
	% of Total	19.3%	6.3%	0.0%	0.0%	0.0%	25.7%
Rs. 51,000- Rs. 70,000	Count	26	13	0	0	0	39
	% within collective monthly family income	66.7%	33.3%	0.0%	0.0%	0.0%	100.0%
	% of Total	8.7%	4.3%	0.0%	0.0%	0.0%	13.0%
Rs.71,000- Rs.1,00,000	Count	18	8	0	0	0	26
	% within collective monthly family income	69.2%	30.8%	0.0%	0.0%	0.0%	100.0%
	% of Total	6.0%	2.7%	0.0%	0.0%	0.0%	8.7%
< Rs.1,01,000	Count	24	3	4	0	0	31
	% within collective monthly family	77.40%	9.70%	12.90%	0.0%	0.0%	100.00 %

	income						
	% of Total	8.00%	1.00%	1.30%	0.0%	0.0%	10.30%
Total	Count	24	3	4	0	0	31
	% of Total	77.4%	9.7%	12.9%	0.0%	0.0%	100.0%
	D) The process of thinking and reasoning are more important than specific curriculum content						
>Rs.20,000	Count	13.4%	45.7%	37.8%	1.6%	1.6%	100.0%
	% within collective monthly family income	13.40%	45.70 %	37.80%	1.60%	1.60%	100.00 %
	% of Total	5.7%	19.3%	16.0%	0.7%	0.7%	42.3%
Rs. 21,000-Rs. 50,000	Count	11	36	24	3	3	77
	% within collective monthly family income	14.3%	46.8%	31.2%	3.9%	3.9%	100.0%
	% of Total	3.7%	12.0%	8.0%	1.0%	1.0%	25.7%
Rs. 51,000-Rs. 70,000	Count	10	12	11	4	2	39
	% within collective monthly family income	25.60%	30.80 %	28.20%	10.30%	5.10%	100.00 %
	% of Total	3.30%	4.00%	3.70%	1.30%	0.70%	13.00%
Rs.71,000-Rs.1,00,000	Count	6	14	6	0	0	26
	% within collective monthly family income	23.10%	53.80 %	23.10%	0.00%	0.00%	100.00 %
	% of Total	2.00%	4.70%	2.00%	0.00%	0.00%	8.70%
< Rs.1,01,000	Count	6	14	6	0	0	26
	% within collective monthly	23.1%	53.8%	23.1%	0.0%	0.0%	100.0%

	family income						
	% of Total	2.30%	4.00%	3.00%	1.00%	0.00%	10.30%
Total	Count	51	132	98	12	7	300
	% of Total	17.00%	44.00 %	32.70%	4.00%	2.30%	100.00 %

According to the economic status of the person, he or she holds certain beliefs. Therefore, in the table number 4 effort made to provide information regarding the beliefs of student- teachers regarding their collective monthly family income. On asking, 'effective teachers demonstrate how to address problems correctly', 32.3% student-teachers with a monthly family income less than Rs.20,000 marked 'Strongly Agree,' 55.1% chose 'Agree', 11.8% chose 'Undecided,' and 0.8% chose 'Disagree'. Furthermore, in the group of families with incomes between Rs. 21000 and Rs. 50000, and between Rs. 51,000 and Rs. 70000, the level of agreement with teaching and pedagogical beliefs was 0.8% and 5.2% respectively. The monthly family income ranges from Rs. 71,000 to Rs.100,000 and more than Rs.100,000 showing similar trends where they strongly agree with the demonstration of the teacher helping with the solution. The lower income group appeared to be more disagreeable than the higher income group. Students learn more effectively when they ask questions rather than listen to their teachers, according to the teaching and pedagogical belief. In all income categories, most teacher students chose 'Strongly Agree' or 'Agree' (27.7% and 57.3% respectively), whereas 0.3% disagreed. In a similar vein, the students' responses to the belief that, "Students learn best when they solve problems on their own" indicated that, despite different income levels, none of the students rejected this belief. Also, 12.9% of respondents chose 'Undecided' as their answer. There are significant differences between the teaching and pedagogical beliefs, such as "the process of thinking and reasoning is more significant than specific curriculum content". According to the analysis, there are more rejections in the income categories under Rs.20000 (1.4%), Rs.21000-Rs.50000 (7.8%) and Rs.51000-Rs.70000 (15.4%). The majority of respondents in the rest of the income category agreed with this statement. Overall, 32.7% of respondents indicated that they were uncertain about this belief about teaching and pedagogy. There is an obvious connection between family income and beliefs about teaching and pedagogy among student- teachers in Goa state. Socio-economic factors are key trait for generation of teaching and pedagogical beliefs (Karaarslan & Sungur, 2011).

Table No. 5: Effects of the Variables of Student teacher for Teaching Subject Towards Teaching and Pedagogical Beliefs

Effect	Beta	Indirect effects	Total effect	Cohen's f2
Effective/good teachers demonstrate how to address the problem correctly >	0.2004	0.0058	-0.1946	0.039

Teaching Subject				
Students learn more effectively when they ask questions instead of just listening to the teacher> Teaching Subject	0.148	-0.0195	0.1286	0.0212
Students learn best when they solve problems on their own > Teaching Subject	0.0398	-0.0105	-0.0503	0.0014
The process of thinking and reasoning are more important than specific curriculum content > Teaching Subject	0.0749		0.0749	0.0058

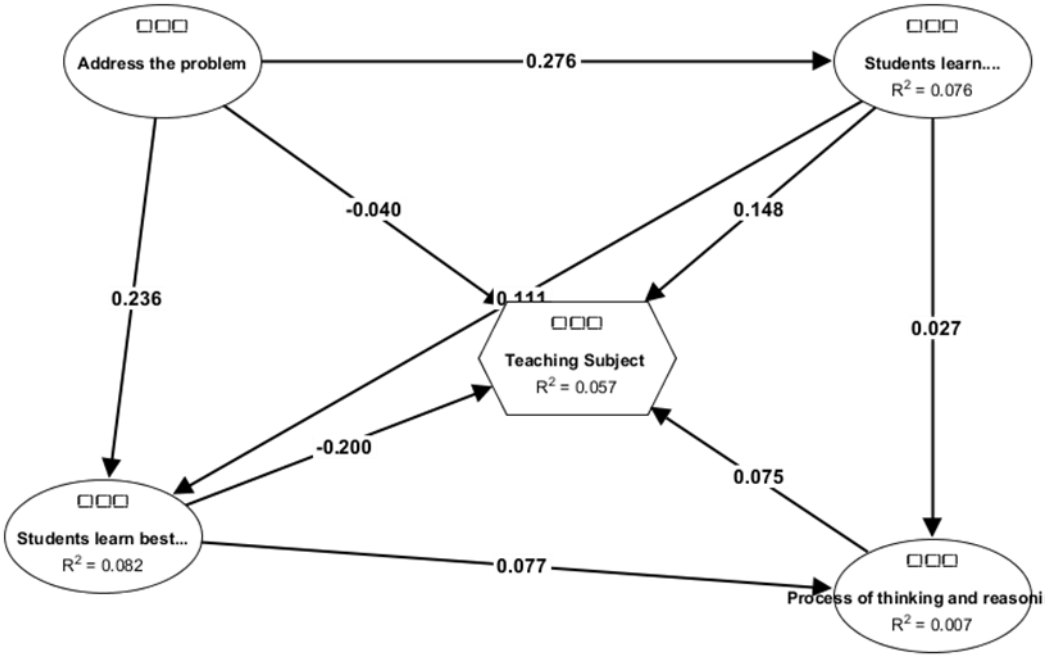

Figure No.1: Measurement of Correlation Coefficient for Teaching subject with various variables

It was found regarding teaching of any subject, 'students learn best when they solve problems on their own had the highest effect (-0.2004), followed by Students learn more effectively when they ask questions instead of just listening to the teacher to teaching subjects (0.148), Effective/good teachers demonstrate how to address the problem correctly to teaching subjects (-0.0398), The process of thinking and reasoning are more important than specific curriculum content to teaching subject (0.0749) (Table 3). Furthermore, considering Cohen's f2, it showed that all the teaching subject of teacher students had negligible impact towards teaching and pedagogical beliefs among the teacher students.

Diagram 1 shows Pearson correlation coefficient of various teaching learning variables with the teaching subject chose by teacher students. There are weak

correlation found between the Students learn best when they solve problems on their own had the highest effect with Students learn more effectively when they ask questions instead of just listening to the teacher (0.111); Students learn more effectively when they ask questions instead of just listening to the teacher with effective/good teachers demonstrate how to address the problem correctly (0.276) and Students learn best when they solve problems on their own had the highest effect with Effective/good teachers demonstrate how to address the problem (0.236). Correlation with Teaching subject with the all four learning and pedagogical beliefs shows insignificant association.

Table No. 6: Chi Square of Teaching with Effective/Good Teachers Demonstrate How to Address the Problem

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.897[a]	40	0.991
Likelihood Ratio	24.345	40	0.976
Linear-by-Linear Association	.099	1	0.753
N of Valid Cases	300		

Null Hypothesis (H_0)- There is no significant relationship of teaching with teacher to address the problem correctly.
Alternate Hypothesis(H_1)- There is significant relationship of teaching with teacher to address the problem correctly.

For teachers with teaching and pedagogical beliefs, p=0.991 was calculated. This level of significance is greater than the assumed level of significance, which is α= 0.05. Accordingly, the null hypothesis (H0) remains retained. This implies that student-teachers lack the relevance of demonstrating, 'an effective teacher is capable of addressing the problems of students'.

Table No. 7: Chi Square of Teaching Subjects with Students Learn More Effectively When They Ask Questions Instead of Just Listening to The Teacher

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	59.840[a]	30	0.001
Likelihood Ratio	33.156	30	0.316
Linear-by-Linear Association	.239	1	0.625
N of Valid Cases	300		

Null Hypothesis (H_0)- There is no significant relationship of teaching along with learning by students more effectively when asked questions instead of just listening to the teacher

Alternate Hypothesis(H_1)- There is significant relationship of teaching along with learning by students more effectively when asked questions instead of just listening to the teacher

For teachers with teaching and pedagogical beliefs, p=0.001 was calculated. This level of significance is more lesser than the assumed level of significance, which is α= 0.05. Accordingly, the null hypothesis (H_0) gets rejected and alternate hypothesis (H_1) is accepted. Thus, the belief that teaching subjects are more powerful than passive learning by school students is attributable to the teaching .

Table No. 8: Chi Square of Teaching with Students Learn Best When They Solve Problems on Their Own

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.599[a]	20	0.894
Likelihood Ratio	14.420	20	0.809
Linear-by-Linear Association	.011	1	0.915
N of Valid Cases	300		

Null Hypothesis (H_0)- There is no significant relationship of teaching with students learn best when they solve problems on their own.
Alternate Hypothesis(H_1)- There is significant relationship of teaching with students learn best when they solve problems on their own.

For teachers with teaching and pedagogical beliefs, p=0.894 was calculated. This level of significance is greater than the assumed level of significance, which is α=0.05. Accordingly, the null hypothesis (H0) remains retained. Hence, it has been confirmed that teaching doesn't have any relationship with pedagogical beliefs where students are encouraged to solve their own problems rather than gaining knowledge in a classroom. The belief like students learn on their own relatively do not relate with any of the teaching practice.

Table No. 6: Chi Square of Teaching with The Process of Thinking and Reasoning than teaching Specific Curriculum Content

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.581[a]	40	0.285
Likelihood Ratio	46.520	40	0.222
Linear-by-Linear Association	1.330	1	0.249
N of Valid Cases	300		

Null Hypothesis (H_0)- There is no significant relationship between teaching with process of thinking and reasoning.

Alternate Hypothesis(H_1)- There is significant relationship between teaching with process of thinking and reasoning than teaching specific curriculum content.

For teachers with teaching and pedagogical beliefs, p=0.285 was calculated. This level of significance is greater than the assumed level of significance, which is α=0.05. Accordingly, the null hypothesis (H0) remains retained. It is further demarcated that merely thinking and reasoning of students to contributed in classroom isn't been enough where syllabus content is still vital.

Cognitivism in Belief system- The Cognitivism theory is used to analyse student-teachers' response on various beliefs. The results of this study reveal that student- teachers prior to admittance to Teacher Education Institutes have a set of beliefs about teaching and pedagogical tools. On the other hand, Cognitivism argues that ideas and beliefs are rooted in the brain in relation to learning centrism. Beliefs are essentially what motivate people to hold onto their belief systems. Observing data from table 2 to table 4, it is clear that most of the beliefs expressed by student-teachers are accepted positively. The student- teachers of the opinion that demonstrations were more effective for troubleshooting. However, these respondents are also keeping in mind that the silent mode of teaching is to permit students to ask questions. Following these teaching and learning beliefs, cognitive theories provided their answers. On the other hand, there is another belief that students learn best when they solve their own problems and think critically, rather than simply studying the curriculum content. Some student-teachers partially rejected this belief. Although those student-teachers who have responded positively for instance may be carrying these beliefs, nevertheless it is likely that they will be able to see or experience this in their school setting. They will able to recollect that information which they had experienced back during their school days.

Conclusion

Based on the findings, no significant differences are observed in gender, i.e., males and females in terms of teaching and pedagogical beliefs. Accordingly, student- teachers representing urban environments have different pedagogical beliefs than those representing rural areas. Student- teachers from tribal areas do not believe in teacher demonstrations in addressing problems while teaching. they also do not support that reasoning and thinking are more valuable on the part of the school students. The study discovered that student-teachers from low-income families represent the majority, while those from high-income families represented the minority group. There is no doubt that income level is a key attribute to changing in the teaching and pedagogical beliefs. In the classroom, teaching subjects was based on the belief that students learn best by solving problems on their own. They learn better when they ask questions rather than simply listing to their teacher. Furthermore, it is also found that teaching possess strong relationship with belief i.e., 'students learn more effectively when they are asked questions instead of just listening to the teacher.' From the results it is also revealed that teaching learning is effective when students answer the questions and have positive relation with the teaching. It is concluded that there are certainty of teaching and pedagogical beliefs which were based on their school experiences and it is witnessed through the theory of cognitivism.

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