

Pre-service teacher's perspectives on the Programme for International Student Assessment for Development (PISA-D): A case of Samtse College of Education

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Abstract— The paper explores pre-service teacher's awareness, interest, perception, attitudes and the level of knowledge on the Programme for International Student Assessment for development (PISA-D). A mixed method of quantitative research and qualitative research was used in this study. The study was conducted among final year Bachelor of Education (B.Ed) and Postgraduate Diploma in Education (PGDE) students at Samtse College of Education, Bhutan. Instruments such as survey questionnaire and interview were used to collect the data. The survey questionnaire was analyzed using Excel Add-in Analysis Tool Pak and Interview data were analyzed by identifying themes. The results revealed that 72.6% of pre-service teachers were aware of Programme for International Student Assessment for Development (PISA -D). Among them nearly 40% expressed their opinion that PISA has impact on curriculum and quality of education in the country as a whole. However, 60% had limited knowledge of purpose and importance of participating in PISA-D. The findings also revealed that 50% of them were interested to know more about PISA.

Keywords— PISA-D, Pre-service teachers' perception, interest in PISA.

I. BACKGROUND

The Programme for International Student Assessment for Development (PISA-D) was initiated and launched by an international organisation called Organisation for Economic Cooperation and Development (OECD) and its partners in 2013 to encourage and facilitate PISA participation for interested and motivated low and middle income countries (OECD, 2016). The main aim of the PISA-D is to build the capacity to manage large-scale student learning assessment and to support policy dialogue and decision making in the participating countries like Cambodia, Ecuador, Guatemala, Honduras, Panama, Paraguay, Senegal and Zambia (OECD, 2016). Bhutan joined PISA-D in 2017 to see how Bhutanese students fair with the students of OECD member countries (The Bhutanese, 2017).

More than 2000 Bhutanese students between the ages of 15 and 16 had attended the PISA-D test in November,

2017 (Zangmo, 2017). The major finding indicated that “students performed slightly well in reading and scientific literacy compared to mathematical literacy. It found that poor reading literacy affected students' performance in science and mathematics because they [were] unable to understand the language” (Rinzin, 2019). The finding also reported that “girls outdid boys in reading literacy while boys performed better than girls in mathematical literacy. Both boys and girls performed almost at par in scientific literacy” (Rinzin). In the PISA reports, teachers are described as actors performing activities that are important for reaching the goals set for education. Teachers are also hope and the happenings of educational transformation and development (Petttersson&Molstad, 2016). However, the PISA is neither taught nor discussed in the educational colleges in the country. Surprisingly teacher's opinion on PISA has not yet been studied, although teachers play very important role in

education process in the country. Therefore the main objective of the study is to explore pre-service teachers' awareness, interest, attitude and knowledge on PISA-D.

II. RESEARCH QUESTION AND SUB-QUESTION

The following research questions were formulated to guide the researcher in the study.

Main question:

What are the opinions (awareness, perception, attitudes, interest and knowledge) of pre-service teachers towards PISA-D test?

Sub questions

1. Are pre-service teachers' aware of PISA-D test?
2. What are pre-service teachers' perceptions and attitudes towards PISA-D test?
3. To what extent pre-service teachers are interested in PISA-D test result of Bhutanese school students?
4. What is the pre-service teachers' level of knowledge on the PISA-D?

III. LITERATURE REVIEW

Programme for International Student Assessment for Development (PISA-D) is comparisons of 15 years old students' knowledge of reading, mathematics and scientific literacy (OECD, 2001). It is a two-hour test that students complete with pencil and paper (Rinzin, 2019). It provides a platform for policy construction, mediation, and diffusion at the national, international, and even global level (Rizvi & Lingard, 2006). PISA measures students' skills in applying what they have learned in school to real life situations. It is concerned with what students can do with what they had learnt. The Director General of the Ministry of Education pointed out that the test will help find out the educational standard of the country through comparison with the performance of students in other PISA member countries. The result of the test will serve as evidence for policy makers as the Ministry of Education how education system can be improved. Further, the result of the test will also be used as "appraisal mechanism on improving teacher's instructional and classroom management practices" (Rinzin, 2019, para, 20).

According to Bhutan Education Blueprint (2014), Bhutanese Education System aspires to partake in international benchmarking system such as PISA in order to improve access, equity, system efficiency and the overall quality of education. Recognizing the importance of participating in international benchmarking systems to check the state of

education in the country against the international standards and acknowledging its need at the earliest, the Ministry of Education endorsed and signed the Memorandum of Understanding (MoU) for PISA participation on 12th January 2017 during the 18th National Education Conference in the presence of His Excellency Lyonchen Tshering Tobgay, the Prime Minister and Lyonpo Norbu Wangchuk, the Minister for Education. Therefore 2457 students randomly selected from 53 schools across the country have been tested in reading, mathematics and scientific literacy in a duration of two hours test conducted in November, 2017. The test was followed by thirty minutes background questionnaire. The test and the background questionnaire were prepared by OECD. The main aim of participating in PISA-D was to mark the baseline of competencies and knowledge of the students as the country has not participated in an international test before.

The result of the test revealed that the quality of education was below average (Lamsang, 2018). In the scale of proficiency level from 1 to 6, reading and mathematical literacy was found to be below level 1 and scientific literacy to be at level 2. For example in reading literacy, Bhutan scored 45.34 % while one of the top performing OECD member countries Ecuador's score is 52.66%. However, it was better with Mathematics and scientific literacy as Bhutan score came to second position with 38.84 percent (Rinzin, 2019). While comparing the standard of Bhutanese students with the OECD countries, PISA proficiency level is found to be below average (Lamsang). The report of the test further called for "strengthening competency based activities in the curriculum" and also recommended teacher education colleges (at Samtse and Paro) "to incorporate competency based teaching and learning modules in pre-service training programme" (Rinzin, 2019, para 2).

With the initiative of participating in international test, the schools across the kingdom that caters schooling to the grade nine students were mandated to institute PISA-D club and conduct tests as a part of their instructional schedule. In some districts, the PISA-D programmes had already been started as a part of the school curricula and every one hour of the Saturdays are devoted to the PISA-D club so as to coach or conduct classes for all the three domains of reading, science, and mathematics alternatively (Wangdi, Dahal, Tshomo, & Dorji, 2018). However, when PISA -D ideas are put into practice, it is important that intent or the aim of the participation needs to be clear. As per the main reason or purpose of PISA-D is to:

test how well young people are —prepared for future challenges, whether —they can analyze, reason and communicate effectively, whether they have —the capacity to continue learning throughout life? And to what extent they have acquired some of the knowledge and skills essential for full participation in society. (Sjøberg, 2014, p.120).

IV. METHODOLOGY

The study adopted a mixed method of qualitative and quantitative approach to explore the opinions (awareness, perceptions, attitudes, interest and knowledge) of pre-service teachers on PISA-D. The 26 survey questionnaires were prepared and administered to all B.Ed. fourth year and PgDE students of Samtse college of Education to assess their awareness, perception, attitude, interest and knowledge. From 23 survey questionnaire, 16 were Likert scale items and seven were binary items. Four students (two males and two females coded as student 1, student 2 etc.) were interviewed to explore their perception towards PISA-D and Bhutan taking part in it. The participation was voluntary. The survey questionnaires were analyzed by Add-in Analysis Tool Pak and Interview data were analyzed by identifying themes.

V. RESULTS

1. Awareness

From the survey data it is revealed that 72.6% of pre-service teachers at Samtse College have heard about the PISA-D test but 27.4% of them were not aware of the same. With regard to the knowledge of PISA ranking of the member countries only 17.7% of pre-service teacher were aware. The survey further revealed that only 35 pre-service teachers were aware of two preliminary tests that were conducted in the country. However, 34 pre-service teachers were aware that Bhutan will be joining PISA-D in 2024. Despite the availability of social media through which the information of PISA-D has been communicated yet majority of the pre-service teachers (37.1%) were informed about it by tutors. Student 1 said that she came to know about PISA- D only when her teacher talked about it in the class. In case of Student 2, he became aware of PISA- D from his parents (who are teachers) at home when he overheard their talk about PISA- D. Only 3.2% of them were informed by media such as newspaper. It shows that the use of media for getting information is poor. The students reliance on tutors and their own friends for information is quite significant as it can be seen in figure 1. Some of the students knew about PISA -D.

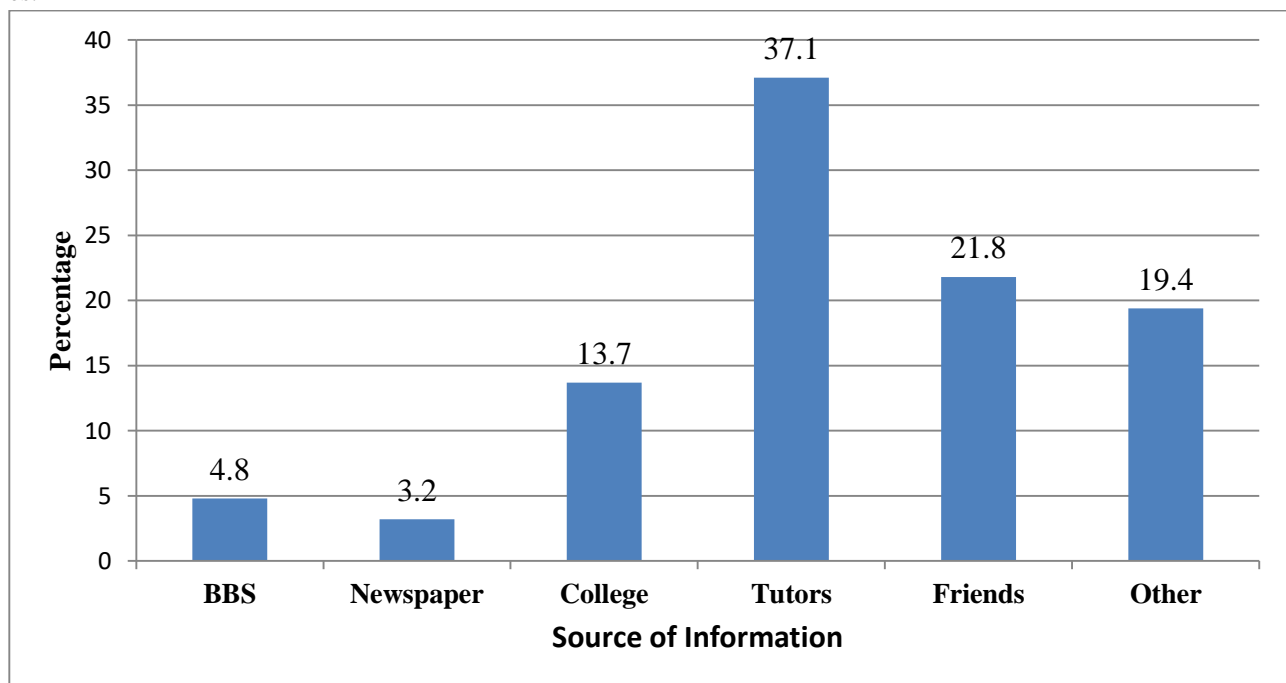


Fig.1. Pre-service teachers preferred source of information about PISA

2. Perceptions and attitudes of pre-service teachers towards PISA –D

Table1. Perceptions and Attitudes of pre-service teacher towards PISA-D in percentage

	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
PISA-D gives a clear picture of quality of education system in the country	15	40	44	1	1
Bhutan should join PISA	27	42	31	0	0
PISA result will lead to change in curriculum	21	40	38	2	0
PISA result will have impact on teachers	14	48	33	5	0
PISA-D results will affect my teaching approaches	8	32	51	8	1
Teachers should have enough knowledge of PISA-D	31	47	22	0	0
I am interested to know the PISA-D ranking of my country	50	34	13	2	0
PISA-D test will raise the standard of education in the country	18	48	35	0	0
I want to know more about PISA-D test	60	30	10	0	0

42% of the pre-service teachers agreed that Bhutan should join PISA-D. Most pre-service teachers agreed that impact of PISA-D is high on curriculum (40%) and the quality of education (40%) in the country. However more than half of them (51%) were not sure whether PISA-D will affect their teaching methods. Majority of the pre-service teachers (60%) want to know more about PISA. 47% of them agreed that teacher should have enough knowledge on PISA-D

50% of them were interested to know the PISA ranking of other countries(see Table 1).

3. Knowledge of pre-service teachers on PISA-D test

On average, more than half of pre-service teachers (58.7%) were not sure what PISA-D actually is and 15.3% of pre-service teachers have low level of knowledge on PISA-D test. Only 9.1% of pre-service have little knowledge on the PISA-D.

Table 2. Knowledge of Pre-service teachers on PISA-D

	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
PISA D is international assessment of knowledge and skills of 15 years-old student	7.2	24.2	61.3	6.5	0.8
PISA- D will focus on science, mathematics and reading skills	13.7	26.6	56.5	2.4	0.8
PISA-D is not just a test, but is also part of international curriculum work based on aggregated comparative data of student ability in science maths and reading of different countries	11.3	37.1	50.8	0.8	0
PISA-D test focuses on 15-year-olds to check whether they can apply what they have learned in school in real life situations or not	4	25.8	66.1	4	0
Mean	9.1	28.4	58.7	13.7	1.6

Though the survey revealed very low level knowledge of pre-service teachers having proper understanding of the concept of PISA- D, yet the interview revealed that the four interviewees did knew its importance in the school education.

In the interview Student 1 expressed that PISA- D assessment evaluates students’ learning achievement. How much of the learning has happened in the class could be revealed in the standardized test as PISA-D. He related that

the teaching should be guided by knowledge of PISA D so that teachers stress importance on enhancing the competency students rather than focusing how much they can memorise or keep concepts in their mind. Student 2 also expressed the importance of PISA D to pre-service teachers since it is to be used to evaluate the overall standard of Bhutanese students with the students of other countries. Student 1 also had the same view that preservice teachers should have knowledge of PISA-D. He said, "it has become part of education system in the recent times and it talks of international standard assessments which is mainly to do with competency than content." He also said that "final students will soon become teachers and in the field if people talk of PISA-D then without any familiarity done in the college, it will be quite difficult to implement PISA-D aspect". Student 4 expressed that if pre-service teachers are taught about PISA-D before the students become teachers, it will help them to contribute enhancing the quality education in the schools. She said, "it is very important for the trainees to know about PISA- D because through PISA-D, once can understand the level the students are at and so will help while teaching. Through PISA- D findings one can get information that students who are not that good at higher order thinking will be good at answering lower order question. Through that teachers can try to get the students analyse and think and understand, not just like what they have studied but what they have understood and can apply."

According to Student 3, "it is important to know about PISA-D because once we graduate and become teachers, we will be in direct contact with the students. If we have right knowledge and information on PISA-D, we will be able to guide our students since it focus on students' application skills. We can help students improve their standards and meet the level of international benchmarks."

VI. DISCUSSION

Teachers are the main stakeholder involved in development and improvement of education in the nation. The improvement and development of the education can be measured by PISA. Therefore teacher should be well informed of PISA, show interest in the result and integrate the research findings in educating the students. However the study found out that 27.4% of pre-service teachers were not aware of PISA which is a huge number. More than half of pre-service teacher were not sure what the PISA really is.

When focus comes to the source of information about the PISA, tutors played important role in term of knowledge acquisition. Therefore the familiarization of pre-service

teachers to PISA in the college is crucial. According to Student 3, "there is no particular module which talks specifically on PISA D. It should be in some ways put in where pre service teachers are made familiar on PISA D." He also said that "with even the Bhutan Council for School Examinations and Assessment (BCSEA) setting certain portion of the question paper based on competency known as Competency Based Question (CBQ), the pre-service teachers should be given skills of designing CBQ questions" Thus the PISA report also calls for strengthening and enhancing competency based activities and assessment in curriculum and recommends teacher-training colleges to incorporate competency-based teaching and learning modules in pre-service training programme (BHSEC, 2019).

As for the impact of PISA, most pre-service teachers agreed that impact of PISA-D is high on curriculum (40%) and the quality of education (40%) in the country.

VII. FINDINGS AND RECOMMENDATIONS

The study revealed that there is low level of knowledge and understanding of PISA-D by preservice teachers despite PISA- D being talked about in the media. The survey revealed that it was mainly through the initiatives of tutors that the pre-service teachers came to know about PISA-D. However, the few who did had some knowledge and information knows the importance of PISA-D.

Therefore, it is recommended that pre-service teachers be made aware of PISA-D as it is one of the initiatives taken by the Ministry of Education to put effort towards enhancing competencies of students' learning. In the Assessment module and in the assessments of other subject specific modules the CBQ model of designing assessment can be integrated and implemented so that what pre-service students learn is aligned with the model or design of BCSEA questions. It has also been reported in the Kuensel, the national newspaper that 'competency based activities and assessments' be integrated into curriculum in teacher training colleges.

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