ORIGINAL ARTICLE

CLASSROOM LEARNING ENVIRONMENT IN PAKISTAN INSTITUTE OF PROSTHETIC AND ORTHOTIC SCIENCES: STUDENTS' PERSPECTIVE

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Background: In 2009 the ISPO team conducted an analysis of the student performance at Pakistan Institute of Prosthetic and Orthotic Sciences (PIPOS) and concluded the situation 'unsatisfactory'. This study aims to explore the opinions of the current students regarding the nature of the classroom learning climate at PIPOS. **Methods:** This survey was carried out in 2010 at PIPOS, Peshawar. The data was collected on a self adapted questionnaire based on a literature review. It was distributed among the 48 students. The data was considered non-parametric categorical, hence contingency table statistics is applied in descriptive format. The statistics were analysed at 95% CI. **Results:** The replies reveal that the variables tested were imperative and it was appalling that the majority went for second score 'Fair' while fewer were in grade 'Good'. **Conclusion:** PIPOS stands low in the ISPO 2010 report, with a high student failure rate due to issues related to curriculum and teaching methodology. There is a lot to improve relating the students' level up to the international standards.

Keywords: Interpretive study, assessing student perception, classroom learning environment, ideal class room environment

INTRODUCTION

In August 2009, a team of ISPO examiners evaluated PIPOS, a co-education international institute for imparting Category-II training. In the concluding remarks[1] it is stated that the "situation is not satisfactory" due to high failure rate and low grades of the students with the reported failures, of 3+Sc <0, 65. Also, the report[1] suggested that the PIPOS academic curriculum and the teaching methodology might be revised to improve the deteriorating situation and improve the quality of education.

This survey aimed at looking into the students' viewpoint about the role of the teachers, students and classroom facilities to improve the study environment and produce professional Prosthetists/ Orthotists (P&O).

It is very difficult to give explicit definition of the classroom environment that might expand and reinforce the quality and skills in students.[2] The classroom atmosphere is related directly to the students' success rate and effective outcome.[3] There is an immense effort made by the educationists on the significance of the need for favourable and encouraging conditions for the students in a teaching facility.[4] In order to emerge the innovative skills of the students, the education environment plays an important role.[5] Ingenuity is required to promote a high cognitive level, and the additional qualities of personality and emotion, and developing experience.[6] Also the complex evaluation procedure, pressure, and the high failure rate can depreciate creativity in students.[7]

What might be the reasons that lead to a high failure rate and lower scoring grades? What might the possible solutions be to overcoming those barriers? In order to fully comprehend these queries, there can be several reasons that influence the students' interest in the class during lecturing needs exploration. This paper will examine: the role of the class teacher, the role of the students and the space and facilities provided in the classrooms.

MATERIAL AND METHODS

The data was collected on a self adapted questionnaire based on a literature review and dispensed among the current students of semesters 2, 3, 5, and 7. The total sample size (*n*) was 48. The semester 7 students were on clinical placements at various PIPOS affiliated centres as; Quetta, Bagh AJK, Muzaffarabad AJK, and PRSP Swabi. The time allocated for returning the hard copies of the survey forms was nearly 4 months. The feedback form covered three main areas that might influence a healthy classroom environment: A. Class teacher's role, B. Student's responsibility, and C. Facilities provided in the classrooms. Each area was evaluated with 4 questions, resulting in 12 total questions to be analyzed for drafting the results.

The following data was collected from the PIPOS prospectus 2009 onward[8] that shows that PIPOS has 9 permanent faculty (teaching staff) comprising 3 females (FM) and 6 males (M). Four faculty members completed their up-grading to ISPO Cat-I (1 FM and 3M). Most of the teaching staffs are assistant professors and are well experienced in Prosthetics and Orthotics. Moreover, there are 8 male and one female visiting faculty members from Khyber Medical University and Engineering University Peshawar at professor level.[8]

The intake entry requirement is F.Sc (pre-medical and pre-engineering) with minimum 45% marks subjected to entry tests (written and practical)

and an interview.[8] Minimum of 12 eligible candidates (FM+M) are entitled for admission to the B.Sc (Hons) in semester 1 in P&O Sciences, University of Peshawar/Khyber Medical University.

A qualitative survey is used in the study to examine the learning environment at PIPOS in order to identify the factors which can affect students' interest in the classrooms. The documents like privacy policy and certificate of consent were duly received from the subjects. The data were collected on the questionnaire set which was distributed among the existing 48 students studying in various semesters. The questionnaire aimed to test variables in three essential areas pertaining to class teachers, students and classroom facilities. There were total 12 closed response questions which were tested on a 4 grade scale for Good- Fair- Poor and Very Poor. The scales preferred ranging from most excellent as G to the inferior quality as VP. The data here is considered to be non-parametric categorical (nominal/ordinal) and the questions showing relationships, hence contingency tables statistics can be applied in the form of description.[9] This is an initial effort to explore the students' points of view to improve the classroom climate at PIPOS.

RESULTS

The data is considered to be non-parametric categorical (nominal/ordinal) and the sample size was n=48. Semester 2 has 13, 3 has 11, 5 has 10 and semester 7 has 14 candidates, with a mean value of 12±1.83. This survey aimed to test minimum 3 variables against 4 closed questions rated as; 1. Good (G), 2. Fair (F), 3. Poor (P), and 4. Very Poor (VP). The students are from Peshawar, Swat, Dir, Swabi, 6 Agencies, and Azad Jammu Kashmir.

Table-1 shows the distribution of male and female students in each semester. The boys are more than 80% as compared to girls in semesters 2, 3, and 5, while more than 60% in semester 7.

Table-2 demonstrates in detail the role of the teachers in creating an effective learning atmosphere. The students' answers show that the majority, i.e., 27 out of 48 (approximately 56.3 %) believe that the use of the teacher's authority is 'Fair' while 19 members (nearly 39.6%) rated the teachers as 'Good'. Similarly, regarding the teachers' interpersonal relationships with the students, they were rated as 'Fair' by 24 out of 48 students (50%) while 17 students rated teachers interpersonal behaviour as 'Good' (35.4%). In reply to whether the teachers favour some students over others, the answers were nearly in same range as above, but 16 out of 48 voted 'Poor' (33.3%), 25% of the students rated the teacher as 'Good' and 25% rated the teachers as 'Fair'. Regarding final question 26 of 48 (54.2%) marked 'Fair' for the teaching methodology in the classes and 18.8% marked both 'Good' and 'Poor' in the same category.

Table-3 reveals the role of the students affecting the classroom environment under four areas. Regarding Q.1, 32 out of 48 (66.7%) students rated their attendance as 'Good' while 14 out of 48 (29.2%) believed it was 'Fair'. Concerning Q. 2, 37 out of 48 (77.1%) rated as 'Good' and 8 out of 48 (16.7%) responded as 'Fair'. In response to Q. 3, 23 out 48 (48%) were rated in second grade 'Fair' while 22 out 48 (45.8%) rated as 'Good'. Pertaining to Q. 4, the responses of the students were nearly same for 'Good' and 'Fair' choices, i.e., 18 out of 48 (37.5%) marked for 'Good' and 17 out of 48 (35.4%) scored 'Fair'. Round about 15% marked for 'Poor' and 13% for 'Very Poor' for the inter classmates attitude with each other.

Table-4 displays in detail the classroom space and the facilities provided there for creating a better learning environment while the students' answers for the questions are detailed as below.

Q. 1 was related to the available space in the classrooms, and the majority of the replies from the pupils were 'Good'. Overall, 29 replies out of 48 (60.4%) favoured 'Good'. Next, 10 out of 48 (20.8%) voted for 'Fair'. Q. 2 enquire about the students about the comfort of the chairs available in the classrooms. 17 out of 48 (35.4%) went for 'Fair', whereas 14 of 48 (29.2%) said that the chairs comfort is 'Poor' and 23% recorded as 'Very Poor'. Q. 3 of the same category exploring for the status of facilities provided in the classrooms and here 29 responses from 48 (60.4%) rated as 'Good' at the same time 20.8% (10/48) marked the facilities as 'Poor'. The last question number 4 in this category was asking for the hygienic conditions of the classrooms and 25 reply out 48 students (52.1%) responded as 'Fair' and 13 out of 48 (27.1%) marked as 'Good'.

Table-1: Gender distribution in each semester

	Semester 2	Semester 3	Semester 5	Semester 7
Male students	10	9	8	9
Female students	3	2	2	5
Total	13	11	10	14

Table-2: Replies of the students related to the teachers

Description	Good (G)	Fair (F)	Poor (P)	V Poor (VP)
Q1. Use of teachers authority in class	19 (39.6%)	27 (56.3%)	1 (2.1%)	1 (2.1%)
Q2. Teachers inter personal behaviour	17 (35.4%)	24 (50%)	3 (6.3%)	4 (8.3%)
Q3. Teachers favouritism to students	12 (25%)	12 (25%)	16 (33.3%)	8 (16.7%)
Q4. Teaching methodology	9 (18.8%)	26 (54.2%)	9 (18.8%)	4 (8.3%)

Table-3: Replies of the students related to their responsibilities

Description	Good (G)	Fair (F)	Poor (P)	V Poor (VP)
Q1. Students class attendance rate	32 (66.7%)	14 (29.2%)	2 (4.2%)	0
Q2. Verbal communication with mates	37 (77.1%)	8 (16.7%)	2 (4.2%)	1 (2%)
Q3. Interest in classes	22 (45.8%)	23 (48%)	3 (6.3%)	0
Q4. Class mates behaviour	18 (37.5%)	17 (35.4%)	7 (14.6%)	6 (12.5%)

Table-4: Replies of the students related to classroom facilities

Description	Good (G)	Fair (F)	Poor (P)	V Poor (VP)
Q1. Spacing in the classrooms	29 (60.4%)	10 (20.8%)	8 (16.7%)	1 (2%)
Q2. Comfort of the class chairs	6 (12.5%)	17 (35.4%)	14 (29.2%)	11 (23%)
Q3. Facility available in classrooms	29 (60.4%)	7 (14.6%)	10 (20.8%)	2 (4.2%)
Q4. Classroom cleanliness	13 (27.1%)	25 (52.1%)	5 (10.4%)	5 (10.4%)

DISCUSSION

First, it is fairly obvious from table and graph 2 that the male students are in majority in every semester and the total numbers of them are 75% (36 out of 48). Females are in minority with 25% (12 out of 48). Prosthetics and Orthotics is largely a practical oriented profession dealing with risk of infections from chronic patients, threats of injuries of revolving machines, the danger of inhaling fumes from laminating plastic materials and hectic physical work.[10] Due to these conditions the number of female applications is less in every semester. Females require extra notice for effective outcome during practical tasks[11] due to physical weak nature while they are quite able theoretically as compared to male students who are tougher and risk females being favoured by the class teachers.[12]

Secondly, the majority of the permanent teaching faculty has a lot of work experience but require updating of qualifications, introduction to the use of modern technologies in training, and participation in special training courses. Expertise from foreign teachers' can raise the standard of teaching and the quality of the students. It is to be noted that in drafting the causes of failures and their solutions are taken from the views of and discussions with; students, faculty members, and the author's personal perception.

Considering the data analysis, most of the responses from the current students in the first category, i.e., role of the class teacher in uplifting the student interest in the classes and the four variables tested reveal that mostly marked scale 2 'Fair' (F) and regarding no favouritism in the class tolled as 'Poor' (P). Now there is an urgent need to know the causes and remedies to move to grade 1 'Good' (G).

In the recent past some faculty were newly inducted and a few of the experienced staff were on upgrading training abroad. Some of the teachers reshuffled to the rehab and management side affecting the quality of teaching and standard of the students. It is now required to upgrade the existing faculty in the newest P&O technologies and improve their educational qualifications. Furthermore, it is required to have certain tutorials and free discussion sessions among teachers and students to resolve certain issues and improve the situation. Also the student's action committee is required to be active in tackling their issues. Again, certain ethical and legal responsibilities need to be resolved to control the authorities of the teachers and students during the working hours to improve personal attitudes and behaviour. Certain teaching aids and methods should be updated by providing teachers special training in teaching.

The second set of questions was related to the role of the students in creating a healthy learning climate in the classrooms. Again there were four variables tested while many of the students opted for top grade Good (G). Regarding the interest level of the students in their classes and their class mates' attitudes responses are almost equal for Fair (F) and Good (G). Replies to the rate of attendance in their classes show nearly 68% of the replies were in scale Good (G) and about 14% in Fair (F). The minimum attendance requirement to sit in the University exams must not be less than 75%. A few of the students' attendance records show good attendance. It is because there is a very clear code of conduct of the students that no one is allowed to be absent during the regular class hours without any valid reasons and the parents and guardians are duly contacted in case of any absence. PIPOS is a coeducation institute and there are frequent discussions and a healthy communication climate among the classmates and that signs Good (G) marked by 77% of the students. This is grey area as the replies to the interest in the classes marked as Fair (F) by 48% and Good (G) by 46%. It might be the mode of instruction here is English while the most of the students' English levels are not up to the mark. PIPOS must ask for IELTS or TOEFL for the entry level and also during the admission process the best students must be chosen. Some sort of mixed responses recorded for inter classmates behaviour and approximately 38% favoured Good (G), 36% Fair (F), 15% Poor and 13% Very Poor (VP). The females are lacking the confidence to freely mix and have discussions with the opposite gender in their classes.[13] Aside from the

students being from different localities, there are language barriers and family restrictions. Debates, tutorials and study trips can improve the classmates' behaviour among themselves. Moreover, the parents' and guardians' awareness and counselling can improve the situation.

Pertaining to the last category, there were again four closed response questions and for the first one pertaining to spacing in the classrooms almost 61% opt for Good (G) and just 20% for Fair (F) choice and 17% for Poor (P). PIPOS developed a new infrastructure where there are one presentation hall, one examination hall with removable partition, one lecture room and a model workshop in the basement. There are usually 3 semesters executed that require same number of classrooms. Sometimes library and the halls are used for the lecturing purposes. Some sorts of changes are required to fully utilise the practical labs both for practical and theoretical purposes to solve the shortage issues while for 12 students; the halls and lecture room have enough space. It will be assist learning if the lecturing halls are equipped with multimedia and better sound system. In regards to the next question of this category, majority of the students are not satisfied fully with the comfort of the class chairs. Just less than 36% replies for Fair (F) grade, slightly over 29% for scale Poor (P), and 23% for very poor while only about 13% for Good (G). This shows that in the recent setup the wooden chairs with fixed side tables are uncomfortable for the students during the class hours. It might be better to replace these either with plastic chairs with foam padding for comfort. Concerning the facilities provided in the classrooms, majority of the students are very satisfied while quite few opt otherwise. Here, more than 60% apprentices score Good (G) for the facilities provided, nearly 21% said Poor (P), and about 15% marked Fair (F) and very few 5% went for Very Poor (VP). Classroom might comprise of enough lighting, water basin, seat comforts and teaching aid equipments for better lecturing. The last question was related to the classrooms hygienic conditions where just over 52% tolled for second grade Fair (F), slightly more than 27% for top grade Good (G) and more than 10% both for Poor (P) and Very Poor (VP). As previously discussed, sufficient lighting, air circulation for fresh air, cleaning and water tapes are the essential needs for the classrooms. PIPOS set ideal hygienic conditions for enough lights, generator facilities for light cut-off issues, air con facilities, multimedia, and cleaners for these sections.

For the betterment in teaching, it is essential to progress in areas regarding the attitudes of the teachers towards their students, to find out the cause of high failure rates and low grading of the students, and to enhance the students level of creativity, their interest in the classes, improve the classroom learning environment, and to minimise the gulf between students, teachers, and their classmates.

CONCLUSION

It is necessary to update the faculty to improve the quality of education and teaching methods. The intake procedure should be tight. PIPOS is already working on upgrading the infrastructure and facility and teaching aids. There is a lot to be further explored to determine the causes of students' failure.

REFERENCES

1. Jensen JS. Follow-Up Analysis of Pakistan Institute of Prosthetics and Orthotic Sciences, Cat-II, Report (un published) from ISPO Follow-up 3/30/2010, Copenhagen; August 2009.
2. Goh SC, Fraser BJ. Teacher Interpersonal Behaviour, Classroom Environment and Student Outcomes in Primary Mathematic in Singapore. Learn Environ Res 1998;1(2):199–229.
3. Burke WW, Litwin GH. A Casual Model of Organizational Performance and Change. J Manag 1992;18(3):532–45.
4. Sternberg RJ, Lubart TI. An investement theory of creativity and its development. Human Development 1991;34:1–31.
5. Fryer M, Collings JA. British Teacher's views of creativity. J Creative Behavior 1991;25(1):75–81.
6. Tardiff TZ, Sternberg RJ. What do we know about creativity? In: Sternberg RJ, (Ed). The nature of creativity. New York: Cambridge University Press; 1988.p.429–40.
7. Amabile TM. Growing up creative. Buffalo, NY: The Creative Education Foundation; 1989.
8. PIPOS Prospectus/2009 Onward, pp:6–15.
9. Howell, DC. Statistical Methods for Psychology. Boston: Duxbury Press; 1987.
10. Cerini B, Murray I, Reiss MJ. Student Review of the Science Curriculum: Major Findings. London: Planet Science 2003.
11. Abraham I, Miller R. Does practical work actually work? A study of the effectiveness of practical work as a teaching method in school science. Int J of Science Education 2008;30:1945–69.
12. Charles K, Luoh M. Gender Differences in Completed Schooling. National Bureau of Economic Research Working Paper 9028. 2002.
13. Michael H, William R. Race and Sex variations in the Causes of the Expected Attainments of High School Seniors. American Journal of Sociology 1975;81:364–94.

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