

Impact of Newly Recruited Science Educators on Academic Achievement of Students at Elementary Level

Dr. Allah Nawaz¹ & Fatima Zahoor²

Abstract

Major objective of the study was to explore the influence of science educators on student's scientific behavior and to explore the effectiveness of teaching science at elementary level by newly recruited science teachers. All the heads of Government schools where science educators are serving at elementary level and administrators of Education department, were included in the population. 80 administrators and heads of Government schools were selected by random sampling method. A questionnaire was used as the tool of research. Results revealed that newly Recruited Science Teachers do lesson planning to produce interest, level of comprehension, innovation, curiosity, practicability, innovative ideas, concept clarity, application of learn knowledge to get high order knowledge. A.V. Aids are used also. Reflective practice is encouraged in students, cooperation with colleagues have been better due to good arrangements in separate labs and the researcher recommends to education department that only trained teachers based on school subjects should be recruited in future.

Keywords: Science Education, Academic Achievement

¹ Education Officer, DEA Multan. a.nawaz.te@gmail.com

² PhD Research Scholar, IIUI

Introduction

The word science is gotten from a Latin word "Scientia" which signifies "to know". Science is systematized information". Science is only composed on basic science". Science is a stack of truth It is viewed as a deliberate and sorted out assortment of information and orderly procedure of examination and understanding (Jones et al. 2014).

Sadrudin, 2013 described science as any of distinctive scholarly exercises linked with the materialistic world and its marvels and inclusion of perception and efficient experimentation. He further characterized science as distinctive control or scholarly exercises that has definite components in like manner. Science implies both the learning contained in such trains as space science, science, material science, science, and topography and the exercises through which it can be acquired. Physics science is the branch of science which manages the investigation of properties of substance, vitality and the shared bonding. Chemistry is taken from the word Keem which is the old name of Egypt and most likely given to it because of background of the Egyptian soil. The specialty of khemia prospered in the early Egyptian and Greek human advancements. The word khemia then got to be Al-Kimiya in the Arabic and after that it got to be speculative chemistry in English dialect (Ahn, et al., 2014). Exploratory investigation of alive belongings is called "Biology". It is made out of two Greek words Bios (Life) and Logos (Knowledge or exchange)(Cahan, Barneron, & Kassim, 2014). According to Gilbert and Lin (2012) biology is the science of life. science is partitioned into various branches i.e. Histology, Morphology, Cell Biology, Ecology, Physiology, Taxonomy, Embryology, Genetics, Biochemistry, Paleontology, and Biotechnology (Hewitt, 2012).

Lazaros, Xu, and Londt (2012) says that an imperative reason for pre-Secondary or College science instruction at Elementary level is to teach people who can make substantial judgments on the estimation of information made by science and different methods for knowing, and to comprehend why the writing related to investigative learning not as outright, but rather as provisional, experimentally based, socially implanted, and the

Impact of Newly Recruited Science Educators on Academic Achievement of Students at Elementary Level

result of some level of suspicion, subjectivity, deduction and creativity.

Educators of science connect the learners both in investigations of different systems for experimental inquiry and in dynamic learning through exploratory investigation. They empower learners, independently and cooperatively, to observe, make inquiries, plan data gathering, decipher information keeping in mind the end goal to create ideas and connections from observational encounters. To demonstrate that they are prepared to educate through practice, educators of science must exhibit that they: Understand the procedures, principles, and presumptions of various techniques for request prompting logical learning; and connect the learners effectively in formatively suitable request that oblige them to create ideas and connections from their perceptions, information, and surmising in an investigative way (Bacharach, Baumeister, & Furr, 2003). The vital duty of science teacher is to engage others in the science activities with special perspective to students, the local community and collective society relevant issues. The capability of learners, as general public, to make acceptable judgments on standards and concerns linked to science and technology, to realize so as to here can be numerous aspects to problem, and that here are forever cost-benefit exchange method for decision formulating, are essential elements not only of science education, but also of residency ship in a elected civilization (Hammer & Berland, 2013).

Teachers of science make a society of various students who make significance from their science knowledge and acquire characteristics for more study and knowledge. They can utilize, rationalize, diversity for classroom planning, make groups, events, policies, and methods. To prove that teachers are organized to make a society of various students, educators of science make obvious that they: having different instructional techniques, approaches, and ways to endorse the growth of numerous learner abilities and stages of understanding; productively encourages the knowledge of science by learners with diverse aptitude, requirements, benefits, and conditions; effectively classify and involve learners in shared knowledge by adopting learners collaborative educational methodologies; Use technical and expertise methods, as well as, however not restricted to workstation skills, to avail assets, gather and manipulate the data,

and assist the education of science; recognize and construct successfully on the basis of previous values, data, observation, and benefit of learners; and construct and sustain a psychologically and publicly secure and helpful educational atmosphere(Ahn et al., 2014).

According to Kershner, Warwick, Mercer, and Kleine Staarman (2012) elementary school instructors usually perform the following tasks: map the instructional material that explains learners syllabus, which includes interpretation and mathematics, and talent, such as learning and converse among other people; evaluate learners to know their talent, potency, and flaws; educate lessons they have planned to an entire class of students or to smaller groups; ranking of learners coursework to examine their educational improvement; converse and meeting with their parents about students grades; effort by means of learners independently to assist them to control the particular educational issues; arrange learners for regular assessment ; formulating and implementation of classroom regulations to train students good conduct; administer the student at outside of the classroom—for example, for the period of mealtime or break; elementary school educators facilitate learners to gain knowledge and also adopt essential perception. Many educators apply a practical method, which includes the use of props, to facilitate learners to know the intangible ideas, resolve the issues, and build up vital thoughts. For example, teachers may demonstrate learners how to perform a science test and then have the learners carry out the research. They may have learners to do work in groups resolve the issues(Bacharach et al., 2003).

Elementary school educators usually coach the fourth or fifth grade. However, in most of the Elementary schools, elementary school educators educate sixth, seventh, and eighth grade. They frequently educate the students the different subjects, such as reading, science, and societal lessons, which is learnt to the whole time of the day(Aldrich, 2013).

The approach of science, science classroom, and lecture/coaching method in science face immense suggestions for classroom administration. In Newton and Newton (2011) declared it that science teacher having influence at the atmosphere, inspiration, and target attainment of the students. They also known as the supporting classroom managers as educators who have transparent aims and speak them to learners; and keep flat

Impact of Newly Recruited Science Educators on Academic Achievement of Students at Elementary Level

conversion in the lectures. Administration in Science coaching-method needs several different assignments: organizing the distinguishing character of the science question (methods, actions, results of science); to handle and manage learner's attitude; providing and managing the materials, assets for science teaching; and organizing instructional period, laboratory blueprint and avoiding risk.(Capie& Tobin, 1981).

Cangelosi (2000) recommended the framework and carried out various teaching actions for several class sessions as a means of attaining and developing learner's character. Understandable information for conduct, highly efficient coordinators to shows learner's philosophy, actions (especially non-verbal ones) stimuli deviation, voice volume modulation, audio-visual aids, funniness, watching, regular learners evaluation, purposeful actions boost the students in involvement of teaching of science.

Classroom in which the educator adopts non-directive and non-evaluative methods results into students become more free and face difficulty in activities of the science (Hewitt, 2012).

Objectives of the Study

1. To Explore the influence of science educators on students scientific behavior,
2. To explore the effectiveness of teaching science at elementary level by newly recruited science teachers
3. To identify Improvement in scientific learning of students at elementary level achievement of the students after the appointment of science teachers for the betterment of learning outcomes and science practical

Delimitation of the Research

Observing the shortness of timings, money, sources and further restraints,

1. The study was geographically delimited in District Multan for Government Schools only
2. The research was expanded to, the performance of newly recruited science educators. And their impact on academic achievement of students of elementary level.

Methodology

The study was descriptive in nature. The following methodology was adopted.

Population

All the heads of Government schools where science educators are serving at elementary level and administrators of Education department, Government of Punjab were included in the population.

Sample

80 administrators of Government of Punjab from Education department and 80 heads of Government schools where science educators are teaching at elementary level were selected by random sampling method.

Research Tool

The research was descriptive in nature. A questionnaire was used as the tool of research for both categories of respondents'. The questionnaires was developed on likert scale consisting of 31 items, to evaluate the different aspects of the problem. The options were, strongly agreed (SA), Agreed (A), Undecided (UN), Disagreed (DA), strongly agreed (SDA) with codes of 5, 4, 3, 2, 1 respectively.

The questionnaire following aspects for both categories of respondents were Included:

Table 1

Objectives of Appointment of Science Educators

| | |
|---|--|
| <ul style="list-style-type: none"> ▪ Advantages of Recruitment of Science Educators. ▪ Implementation of innovative learning skills ▪ Curriculum (Content, Topic, Syllabus) ▪ Problem Solving ▪ Behavior ▪ Feedback | <ul style="list-style-type: none"> ▪ Results (2012-15) ▪ Results before the recruitment of science educators ▪ Increase / Decrease in enrollment ▪ Role of Arts teachers in teaching science ▪ Impact of Arts teachers in teaching science ▪ Classroom Environment ▪ Use of A.V. Aids ▪ Motivation ▪ Encouragement ▪ Home work |
|---|--|

Impact of Newly Recruited Science Educators on Academic Achievement of Students at Elementary Level

Results

The data was collected in master sheet; it was tabulated and analyzed by statistical methods of percentage and mean score. In the last interpretations were made and conclusions were drawn as under;

Table 2

Analysis of Group-A and Group-B

| Statements | Group- B Heads | | | Group-A Officers | | |
|---|----------------|----------|------------|------------------|----------|------------|
| | % SA+A | % DA+SDA | Mean Score | % SA+A | % DA+SDA | Mean Score |
| Teaching with preparation | 75 | 25 | 3.57 | 73.75 | 26.25 | 3.84 |
| Interest in learning of science | 57.5 | 42.5 | 3.33 | 62.5 | 37.5 | 3.45 |
| Improve qualification | 63.7 | 36.2 | 3.77 | 76.2 | 12.5 | 3.68 |
| Science labs are available | 61.25 | 38.7 | 3.36 | 85 | 15 | 3.9 |
| Science lab is well prepared | 71.25 | 28.7 | 3.71 | 76.25 | 16.25 | 3.84 |
| Classrooms are well equipped | 65 | 35 | 3.61 | 76.25 | 23.75 | 3.94 |
| Scientific Charts | 62.5 | 37.5 | 3.39 | 76.25 | 23.75 | 3.94 |
| less interested in science | 56.25 | 43.7 | 3.28 | 62.5 | 37.5 | 3.49 |
| learn new ideas in science. | 67.5 | 32.5 | 3.56 | 73.75 | 26.25 | 3.74 |
| The students do experiments | 56.25 | 43.7 | 3.19 | 72.50 | 27.5 | 3.71 |
| The students are interested | 62.5 | 37.5 | 3.33 | 86.25 | 13.75 | 3.93 |
| Want to learn about practical | 66.25 | 33.7 | 3.59 | 76.25 | 18.75 | 3.79 |
| results of students are better | 65 | 35 | 3.28 | 65 | 35 | 3.28 |
| Concepts students are clearer | 60 | 40 | 3.28 | 67.5 | 32.5 | 3.48 |
| comprehension of students is higher as before | 28.7 | 71.2 | 2.46 | 52.5 | 43.75 | 2.95 |
| PEC results are satisfactory | 71.2 | 26.2 | 3.64 | 83.75 | 12.5 | 4.09 |
| Teaching material is relevant | 65 | 34 | 3.56 | 77.5 | 13.75 | 4 |
| Teachers are expert | 52.5 | 47.5 | 2.92 | 81.25 | 12.50 | 3.98 |
| Students learn through practical | 62.5 | 37.2 | 3.45 | 71.25 | 18.75 | 3.75 |
| lab material are useful | 18.75 | 81.2 | 2.09 | 83.75 | 8.75 | 4.16 |

In group B 75% respondents are of view that ‘The teachers teach the students with preparation and lesson planning. All respondents gave their responses and 25.00% have rejected the view, in group A 73.75% respondents are of view that “The teachers teach the students with preparation and lesson planning.” All respondents gave their responses. 26.25% have rejected the view.

In group B 57.5% respondents are of view that “The students take interest in learning of science.” 42.50% have rejected the view, in group A 62.5% respondents are of view that “Duration of the course was suitable” 37.5% have rejected the view. In group B 63.75% respondents are of view that “The teachers have to improve qualification as per demand of their job.” 36.25% have rejected the view.

In group A 76.2% respondents are of view that “The teachers have to improve qualification as per demand of their job.” 12.5% have rejected the view, in learning through practical...10.0% remained un-decided. 18.75% have rejected the view.

In group B 18.75% respondents are of view that “The provided lab material is useful for our institution. 00.00% remained un-decided. 81.25% have rejected the view, in group A 83.75% respondents are of view that “The provided lab material are useful for our institution”. 7.5% remained un-decided. 8.75% have rejected the view.

Discussion and Conclusion

Newly Recruited Science Teachers do lesson planning to produce interest, level of comprehension, innovation, curiosity, practicability, innovative ideas, concept clarity, application of learn knowledge to get high order knowledge. A.V. Aids are used also. Results have been improved due to scheduled tests. Reflective practice is encouraged in students, cooperation with colleagues have been better due to good arrangements in separate labs. Teachers are Subject Specialist / Senior Subject Specialists, delivering modern knowledge through models and assignments. Heads of Schools are not satisfied with subject knowledge, teaching skills and use of models by newly recruited science educators. Similarly, they deny that reflective practices and model

Impact of Newly Recruited Science Educators on Academic Achievement of Students at Elementary Level

making skills of students have been improved. But administrators disagree with this opinion.

Recommendations

The topic of this study was “The impact of newly recruited science educators on academic achievement of students at elementary level”. It was based on questionnaire (opinion based). The researcher puts forward following recommendations:

1. The future researchers are requested to conduct this study based on PEC results.
2. Future researchers are requested to conduct research about newly recruited arts teachers.
3. The researcher recommends to education department that only trained teachers based on school subjects should be recruited in future.
4. The appointment of DVMS., Engineers, and other professional should be avoided.
5. It is also recommended to the department not to allow and appoint Ph.D and M. Phil qualified at Elementary and Secondary level of posts.

References

- Ahn, J., Clegg, T., Yip, J., Bonsignore, E., Pauw, D., Gubbels, M., Rhodes, E. (2014). Seeing the unseen learner: designing and using social media to recognize children's science dispositions in action. *Learning, Media and Technology* 14(3), 1-31. doi: 10.1080/17439884.2014.964254
- Aldrich, R. (2013). Neuroscience, education and the evolution of the human brain. *History of Education*, 42(3), 396-410. doi: 10.1080/0046760x.2012.749543
- Bacharach, D. (2003). A phenomenological study highlighting the voices of students with mental health difficulties concerning barriers to classroom learning. *Journal of Further and Higher Education*, 38(3), 361-376. doi: 10.1080/0309877X.2013.778964
- Buchanan, D. (2013). A phenomenological study highlighting the voices of students with mental health difficulties concerning barriers to classroom learning. *Journal of Further and Higher Education*, 38(3), 361-376. doi: 10.1080/0309877X.2013.778964
- Cahan, S., Barneron, M., & Kassim, S. (2014). Gender differences in school achievement: a within-class perspective. *International Studies in Sociology of Education*, 24(1), 3-23. doi: 10.1080/09620214.2014.895132
- Cale, L., & Harris, J. (2011). 'Every child (of every size) matters' in physical education! Physical education's role in childhood obesity. *Sport, Education and Society*, 18(4), 433-452. doi: 10.1080/13573322.2011.601734
- Gilbert, J. K., & Lin, H.-s. (2012). How Might Adults Learn About New Science and Technology? The Case of Nanoscience and Nanotechnology. *International Journal of Science Education, Part B*, 3(3), 267-292. doi: 10.1080/21548455.2012.736035
- Hammer, D., & Berland, L. K. (2013). Confusing Claims for Data: A Critique of Common Practices for Presenting Qualitative Research on Learning. *Journal of the Learning Sciences*, 23(1), 37-46. doi: 10.1080/10508406.2013.802652
- Hewitt, E. (2012). Emerging thoughts on an approach to engaging pupils in effective group talk in science. *Education*, 42(4), 402-418. doi: 10.1080/03004279.2012.713373

Impact of Newly Recruited Science Educators on Academic Achievement of Students at Elementary Level

- Jones, H., Black, B., Green, J., Langton, P., Rutherford, S., Scott, J., & Brown, S. (2014). Indications of Knowledge Retention in the Transition to Higher Education. *Journal of Biological Education*, 49(3), 261-273. doi: 10.1080/00219266.2014.926960
- Kershner, R., Warwick, P., Mercer, N., & Kleine Staarman, J. (2012). Primary children's management of themselves and others in collaborative group work: 'Sometimes it takes patience ...'. *Education 3-13*, 42(2), 201-216. doi: 10.1080/03004279.2012.670255
- Lazaros, E. J., Xu, R., & Londt, S. (2012). Using an Activity to Simulate the Dangers of Multitasking with Technology while Walking. *Science Activities: Classroom Projects and Curriculum Ideas*, 49(3), 88-93. doi: 10.1080/00368121.2012.671199
- Sadrudin, M. M. (2013). Are we preparing global competent teachers? evaluation of the incorporation of global education perspectives in teacher education curriculum in Pakistan. *International Journal on New Trends in Education and Their Implications*, 4(1), 188-202.