

P.K.M. COLLEGE OF EDUCATION

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PROGRAMME PORTFOLIO

DEPARTMENT OF NATURAL SCIENCE
2019-2020



DEPARTMENT OF NATURAL SCIENCE

ACTIVITY REPORT - 2019-2020

Objectives

- To acquaint with the theoretical back ground in teaching learning process.
- Develop skills in teaching like skill of introducing a lesson, skill of explanation, illustrating with examples, class management, skill of questioning, skill of board writing, skill of using learning aids etc.
- Develop research skills and research culture among the student teachers by preparing and publishing field manuals, books, booklets etc.
- Develop competent natural science teachers with subject competency, organization skills, communication skills, ICT Skills, leadership quality, laboratory skills, skills in organizing different curricular and co-curricular activities etc.
- Develop Natural science teachers with scientific sensitivity, attitude interest and creativity in all works and activities.
- Student teachers get critical thinking, analytical skill, creativity skills, organization skills, leadership quality etc. through different co-curricular activities such as college preparation debate etc.
- The student teacher develops presentation skills and communication skills through different presentations and seminars.
- By doing outdoor activities like garden preparation, medicinal plants, field trips, surveys helps the learner to get opportunity to spend with nature and gain naturalistic intelligence.

Strategic plan

- By collage preparation the student teachers will get critical thinking, analysis, creativity skills, organizing skills etc.
- Through debate the student teachers develop communication skills, leadership quality, management skills, organizing different points, time management, skills in expressing ideas, presentation skills etc.
 - By preparing science related books-booklets preparation the student teachers will get skills in collecting data, analyzing, organizing, presenting and reporting etc.
 - Surveys, field trips project works etc were also helps the student teachers to acquire different skills.
 - Seminars and presentations will improve the presentation skills and confidence among the student teachers.
 - Both theoretical and practical curricular and co-curricular activities definitely develop different skills and this makes efficient natural science teachers with ethics and positive attitude.

Course learning outcomes

- By theoretical activities, discussions, demonstrations, debate, panel discussions, online teaching etc student teachers get a sound knowledge on the theoretical background of the teaching learning processes, become subject competent.
- By the practical sessions such as microteaching discussion, demonstration and criticism lessons the student teachers develop different skills in teaching learning process, student management class management, organizing different programmes, science clubs, exhibitions, games, conducting projects, role plays debates and several curricular and co-curricular activities.
- By preparing science related books the student teachers develop skills in collecting data, writing skills, skills in analysis, organizing skills, editing skills etc.

- By doing action research and preparing articles and presenting papers the student teachers develop research skills.
- By conducting survey, field trips, projects the student teachers get deeper knowledge in different methods and acquire different skills.

Activities planned

- Collage
- Scientific related booklet
- Debate
- Field manual survey on plants in campus
- Innovative presentations
- Panel discussion
- Project
- Assignments
- Content analysis
- Practical records
- Discussion, demonstration and criticism. Sessions.
- Teaching aids preparation
- Action research
- Biological album
- School internship.

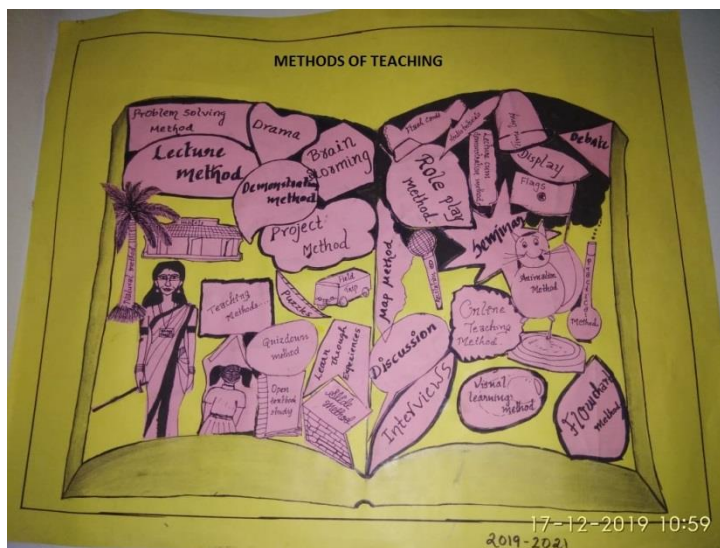
ACTIVITIES OF 2019-2021BATCH

FIRST SEMESTER – OPTIONAL

Many curricular and co-curricular activities were done in the Natural Science class. The details were given below.

1. COLLAGE

A Collage was prepared by the student's teachers on the topic "Different Methods of Teaching". The topic was given by the teacher and students conducted discussion sessions and prepared captions, pictures, drawings etc. for collage preparation. Finally they prepared a good collage on different methods of teaching or teaching strategies.



2. RECENT INVENTIONS IN BIOLOGY (Last 10 years)

Prepared Album named "Recent Inventions in Biology in past ten years". Nobel Prize winners and eminent personalities, who contributed several inventions, were also included. Covered different areas, such as Genetics, Physiology, Biotechnology, Cancer research areas, new instruments etc.

3. DEBATE - SOCIAL MEDIA AND EDUCATION

Debate was conducted over social media and education at 17/7/2019 in natural science class room. Teacher selected the topic from the different ideas of the students that she already given opportunities for raising the topics to be debated. Then she grouped the students into two. One group decided to talk for the social Medias an education. Opposing group was ready to talk against the social Medias and education.



Two groups started to discuss about their topics. Moderator Sivakeerthana Dinesh started the debate by saying the topics of both groups. Social medias are more helpful for the students in their learning that they would get enough resource materials from there. Notes and important information are transmitted easily through social medias. Updated information are available there instead of old books from libraries. And which are easily accessible for everyone. We got information from anywhere in the world. Sometimes there would be no enough books in libraries. But social Medias are easily available for everyone.

Other group discuss about the issues regarding the usages of social medias by students. Language used in these social medias would results pathetic usages of the normal language, their spellings, vocabulary etc. Concise and special languages used in mobiles reduce the usual language skills of people. The knowledge available in these social networks was need not be authentic. Some fake news's may also be spread through media. Misuse of these social media causes several social issues, especially in the case of adolescent students. If mobile phones are damaged or hang, or electricity was unavailable, we could not access any information's from these devices. Our every data suddenly lost unfortunately. But, if we use the books, such problems are not arouses. Authenticity is also not became a problem because books should edited before printing.

Moderator concluded the session by pausing the merits of social Medias in education as well as dark hands behind it. Social Medias are so helpful but over use of them reduces the communication skill, thinking skill, language skills and may lead to serious health problems, depression, anxiety etc.





4. FIELD MANUAL

The field manual is a 2019-2020 Natural Science Batch teacher student's initiative. The programme began with the idea of getting to know the campus and the environment around it. The field manual is intended as a way for faculty students to learn more about the plants on the campus and their advantages. The field manual, which resulted from the efforts of ten students, includes descriptions about fifty plants, as well as pictures. 25-10-2019 Principal Dr. Jessy N C released the field manual at a function held the college on Friday 2.30. Bency Scaria welcomed the gathering at the function presided over by Anuhridya O.



Amrutha K. given a detailed class on the plants included in the field manual. Various species of plants have been identified and the information's like their use, mainly commercial, decorative etc are able to all the students. One of the plants included in the field manual is *Impatiens kleinii*. This herb is found in the Western Ghats. The plant is capable of pulling out most of the water as the summer. So, it is very different from other plants. It provided an opportunity for teachers and teacher students to clear up doubts about the field manual. Then Drishya V. V. was delivered vote of thanks for the event.

5. MEET THE TALENT

Series 1

Department of Natural Science, P.K.M College of Education, conducted a series program named 'Meet the Talent' on 25 October 2019. The program was aimed to explore the rare and unique talented personalities around us. In the phase 1 of 'Meet the Talent', we introduced, a nature loving fashion designer, Neelima R Thomas (Assistant Professor, Department of Fashion Technology, Assumption College, Kottayam) to the whole class.

Neelima R Thomas completed BSc in Fashion Technology from NIFT, National Institute of Fashion Technology. She was awarded as the best outgoing student and best outstanding performer in Fashion Designing. She has published more than 10 papers in National and International Journals.



She is specialized in Sustainable Fashion. Sustainability is that which meets the needs of present without compromising the needs of future generation. It is about being kind to our environment, responsible with our resources and treating our fellow workers like human beings. The fabric wastage in the industry evolves while cutting the fabrics, due to the shaping of the patterns and inefficient marker planning. Although effective marker planning is implemented a certain amount of fabric will be wasted. About 60% of a garment cost is for its fabric. Therefore, minimizing the wastage of a garment can control its cost widely.

The sustainable fashion can be achieved by different ways such as developing minimal wastage garments, multitasking garments, applying design transition, using least maintained garments and incorporating emotive and timeless designs. Among these, minimal wastage through efficient pattern making and marker planning are the easier and efficient method. In industrial garment preparation, marker making is very important topic for the maximum usage of fabrics and for minimum. This is the process which is performed to draw the pattern pieces on the fabric before cutting. Sustainability can be achieved here by analyzing the fabric wastage in the cutting process. For avoiding wastage, the pattern can be cut in such a way that less shaping is done or the wasted fabrics can be utilized as trims or any other parts of the garment. The marker patterns can be then arranged to ensure minimum fabric wastage, thereby creating an efficient marker plan.

Her present study was planned to dye of fabrics with natural dyes from Java plum keeping in view of the current scenario of environmental consciousness. This investigation unveiled that the Java Plum has the dyeing potential as a source for cotton dyeing. The use of mordant has resulted in good fastness exhibited by the cotton clothes. The significance of this study lies in the ecofriendly approach of the experiment. Not only the textile wastes pollute our environment and clog landfills around the world, but also wastes the precious resources that went into making these textiles. Waste management in industries are poor and it is contaminating our earth. The importance of taking a sustainable approach towards garment designing and production awareness among exporters and participants in bringing sustainability is much more than just organics.

6. OZONE DEPLETION - PANEL DISCUSSION

A panel discussion was conducted on the topic “Ozone depletion”. In the panel discussion students presented different topic areas like Significance of ozone layer, Amazon forest fire, reasons for ozone depletion, ozone conservation strategies etc.

7. PROJECT

A project was done named “Study of Species diversity in Sacred Grove, Madayi kavu, Kannur, Kerala”. This is an authentic record of flora and fauna found in that area. Madayi Kavu is a very famous sacred grove in Kannur District. It is a part of Madayi hills. The land is rich in biodiversity. Almost every year new species are being identified from this ecological spot. As per our study on the diversity on the Madayi kavu listed out 5 grasshoppers, 10 spiders, 5 ants, and 20 plants. Some plants are endemic and deserve conservation. The area is rich in biodiversity such as migratory birds, butterflies, insects etc.

8. PLANTING OF PLANTS

The students were planted different ornamental plants in the campus. They checked them and maintained them.

9. ASSIGNMENT

Students were prepared assignments on different topics by referring books, library, online journals articles etc. and submitted it.

ACTIVITIES OF 2019-2021BATCH

SECOND SEMESTER – OPTIONAL

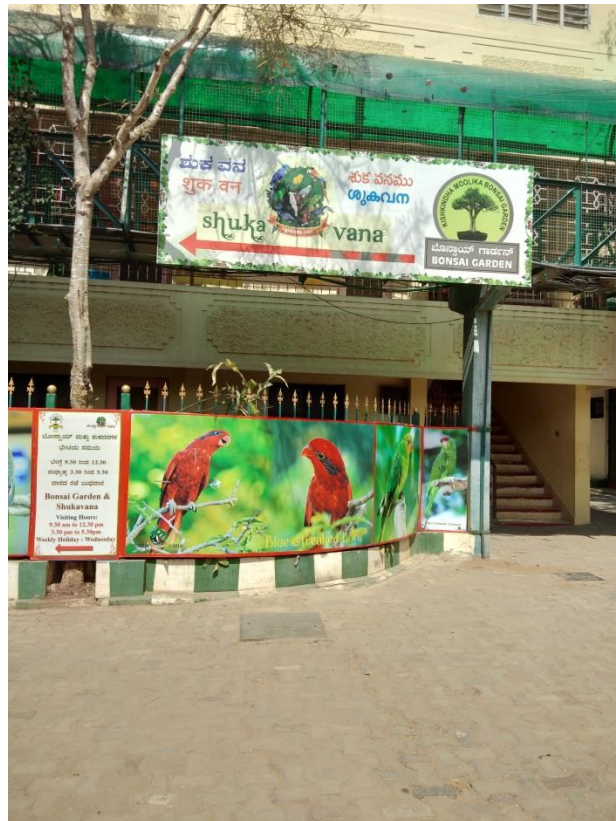
1. CONTENT ANALYSIS

Done content analysis of different topics in biology 8th, 9th and 10th classes in to biological terms, facts and concepts and made a booklet of content analysis.

2. FIELD TRIP

Conducted one day field trip to Mysore. Teachers are efficient organizers. For improving the skills of organization, planning, Communication, and other social skills, field trip is an irreplaceable task. It helps teaching trainees to develop social skills, leadership, Etc.

As the part of B. Ed. curriculum the students of Natural Science 2019-2021 batch conducted a field trip to Mysore. It was on 18th January 2020. Our group had total 10 members 9 students and one teaching faculty Mrs. Jomol Jose. The main destinations of the field trip were Mysore zoo, Shukavana Rehabilitation Centre, Ranganathittu birds sanctuary, Brindavan garden etc.





We started our journey from college hostel at 3:45 am in a traveller. We reached Mysore at 8:30 am and had our breakfast from a Kerala hotel. After breakfast we went to our first destination, Mysore zoo. We reached there at 9:30 am and spend around one and half hours in zoo. Then we came out and reached at Shukavana Rehabilitation Center. It was a place specially created for different varieties of parrots. After Shukavana we reached in a restaurant and had our lunch at 1 o'clock. After lunch our next visiting spot was The Ranganathittu Birds Sanctuary and we spent around one hour in it. It was a beautiful place rich in trees like bamboo and it also having a river portion, In the river side there were a boating service. The Ranganathittu was really good for bird watching. Then we reached at the beautiful Brindavan Garden at 5:20 pm.. after spending few hours there we returned at 8:30 pm and reached college hostel at 2:15 am..

3. PROJECT

Conducted a project on current formative assessment practices in biological science at secondary school level and submitted the report.

4. ASSIGNMENTS

Assignments on different topics in both pedagogy and assessment papers and they were submitted and presented.

5. DESIGN THINKING WORKSHOP

Conducted a workshop on design thinking patterns and prepared the output materials by using charts. Students were enthusiastically participated in the workshop.

6. MEDICINAL PLANTS GARDEN

Prepared medicinal plants garden of more than 25 varieties in the campus



7. ONLINE CLASSES

Conducted online classes by using zoom, whats app, audio and other technologies to cover topics like models of teaching, CAI, discussion lesson plans etc on lockdown days.



CLASS ACTIVITIES OF 2018-2020 BATCH

THIRD SEMESTER OPTIONAL

During the academic year 2019-20 Dept. of Natural Science organized various curricular and co-curricular activities to develop different teaching skill of student teachers. Following activities were organized.

1) PREPARED DISCUSSION LESSON PLANS

To familiarize with lesson planning student teachers discussed the various instructional objectives and activities in groups and prepared 5 discussion lesson plans based on high school biology.

2) PREPARED DEMONSTRATION LESSON PLANS

Students observed two demonstration classes of Nimitha teacher of Sreekandapuram School and two classes of Majeed Sir from Nedungome Higher secondary school. One demonstration class was observed during first week of internship. They prepared 5 demonstration lesson plans and submitted it.

3) CRITICISM CLASSES

Students prepared individual lesson plans and conducted classes at Mary land High School, madampam.

4) MICROTEACHING

Based on the core teaching skill student teachers prepared lesson plans, took classes, collect feedback and repeat it. They also prepared link practices.

5) RESOURCE UNIT

Prepared resource unit individually and based on it prepared power point presentations.

6. PEDAGOGIC ANALYSIS OF THE CONTENTS IN BIOLOGY TEXT BOOKS.

The 8th, 9th, 11th standard biology text book of SCERT, Kerala state syllabus were pedagogically analysed or content analysis were done s a part of the third semester curriculum. The content analysis were gave a thorough knowledge about the present system and the gradation of curriculum content in the secondary school level.

7. ASSIGNMENTS AND SEMINARS

Assignments were prepared by each students based on the selected topic from the paper pedagogy of school subject part II (Natural science). And every one present a detailed class room seminar on their topics and discussions were also done.

8. PREPARATION OF TEACHING AIDS

Teaching aids were prepared by all student teachers based on the high school biology topics. Varsity of aids are used such as audio aids, visual aids, and audio visual aids. It include videos, animation, power point presentations, chart, models (working and still) etc. Most of the importance was given to ICT assisted teaching aids as the present system demands.

Videos

Student teachers take videos related to the biology curriculum from online resources and also from the educational web site by Kerala education department named Samagra. They take opportunity to edit the videos for their requirement.

Power point presentations

Power point presentations prepared on different topics. They used them for the easy convey of ideas. And new inventions were experimented by each one.

Charts

Multicolour charts are used. Different graphical organizers also used.

Models

As teaching aids the still and working models were made for the better teaching learning process. All the models were prepared by waste materials and other bio degradable materials to aware the students with the importance of recycling.

9. ACTION RESEARCH

Student teachers were done action research or case study on different problems identified by them during their internship period. They conducted detailed study and find out satisfactory solutions to these problems with their knowledge and also guidance from resource persons. It enhances their observation power and ability to cope with learners.

10. SCHOOL INTERNSHIP PROGRAMME.

All student teachers completed their school internship programme in between the period of July 4th 2018 to November 9th 2018 in different schools. The students were completed their internship in five different schools. Every one completed more than sixty lessons in HS, UP and HSS. And all of them give their maximum for the academic progress of the individual schools. The curricular and co-curricular activities conducted by the students were excellent. With completing the lessons they also developed achievement test for each standard.

11. WORKING WITH SCHOOL PROGRAMME

Students conducted different curricular and co-curricular activities in their respective schools during their school internship period. All special days were observed in different ways. The ozone day, Independence Day, Onam celebrations and Kerala piravi was the major programs. Many competitions were conducted for students and give prizes for the winners. Remedial coaching classes for the backward students were one of the important events in school.

12) BIOLOGICAL ALBUM

Students prepared biological album individually based on different topics such as different flora, fauna, agriculture, nutrition, environmental issues, medicinal plants etc.

13) DIGITALIZED LESSON PLANS

Students recorded the 6 classes during internship programme and digitalised lesson plans.

COMMON ACTIVITIES

WORLD ENVIRONMENT DAY- “Air Pollution”

International Environment day was celebrated every year on June 5th. This day was celebrated in P K M College of Education on 7th June to 17th July 2019 in different perspectives in marking the importance of environment conservation based on the theme ‘Beat Air pollution’. We had conducted a theme based Seminar & Technical session for the B.Ed. Students, Air Pollution survey and air pollution awareness campaign for the community.

Inauguration session

The inaugural session was started by 2.30 pm. The warm welcome speech was delivered by Staff co-ordinator Miss. Jomol Jose. The presidential address was delivered by Dr. Jessy N.C., Principal, P K M College of Education, Madampam. The International Environment day celebration was inaugurated by honourable resource person K.K. Ravi, District Co-ordinator of Pothuvidhyabhyasa samrakshana yojanam & Co-ordinator of S.S.P. by giving the tree seedlings to the principal followed by an inaugural address. The vote of thanks was delivered by student co-ordinator Sreya Joseph.



Seminar session

The seminar session was based on the theme “Beat Air Pollution” by the resource person K.K. Ravi, District Co-ordinator of Pothuvidhyabhyasa samrakshana yanjam & Co-ordinator of S.S.P. The seminar session commenced at 3 pm. The seminar session was about Air pollution, its significance and its consequences. It threw light on conservation of our environment. The presentation showed the current position of air pollution and status in the world and in India. It also brought a clear picture about the worst condition of our environment due to Air pollution. The seminar session had put forward the concerns regarding the measures to reduce the air pollution and preservation of our environment. This session was winded up by conveying the vote of thanks to K.K. Ravi Sir was delivered by the student co-ordinator Sreya Joseph.



TECHNICAL SESSION

A technical session was engaged by Mrs. Susmitha T.M., (HSST Botany, GHSS Mathil, Kannur) on 8th July. The session was covered different ways to withstand air pollution, necessary changes in day today life activities, health issues, precautions etc.



AIR POLLUTION SURVEY

An air pollution awareness survey was conducted for the community in different nearby areas of Sreekandapuram by the B.Ed. Students. Survey method was used for the study. A total of 250 Samples were collected for the study. The survey tool was prepared by the students under the guidance of the programme co-ordinator. The tool was prepared based on

different dimensions of air pollution awareness. The tool was encompassed with general information's and 15 air pollution awareness based questions. The samples were analysed in detail and 70% of the people are unaware about the important information's of air pollution.

AIR POLLUTION AWARENESS CAMPAIGN

In the light of survey, we prepared leaflets on different dimensions of air pollution awareness. In the leaflet we included different necessary information's of air pollution. B.Ed. students were distributed the air pollution awareness leaflets to the different community areas, in which the air pollution awareness survey was conducted.



Most of the people are still unaware about the consequences of air pollution like health issues, global warming etc. Most of them dispose plastic wastes by burning it. So it is a very serious issue. We tried to convince the seriousness of consequences of air pollution to some of the community. We should implement action oriented programmes immediately to save our earth and thus our lives.

Feedback

Conducted different curricular and co-curricular activities such as collage, debate, panel discussion recent innovations in biology, meet the talent, projects, assignments, microteaching, discussion, demonstration, criticism, pedagogic analysis of the content, preparation of teaching aids, biological albums, department wise seminars, school internship etc. were appreciated and these activities played a major role in transforming the student teachers to efficient competent teachers with different skills and ethic



DEPARTMENT OF NATURAL SCIENCE

2019-2020 ACADEMIC YEAR