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DUMKAL COLLEGE

P.O- Basantapur, P.S- Dumkal, Dist.- Murshidabad, West Bengal, PIN- 742406

(Govt. Aided, Affiliated to the: University of Kalyani Included under section 2(f) & 12 (B) of UGC Act.)

Best Practices (2019-2020)

[I] **Title of the Practice:** **Nurturing Partnerships: Strengthening Bonds with Teachers for Academic Excellence.**

Objective of the practice:

With smaller class sizes in our college, it's easier for the students to build meaningful relationships with the teachers. They can take advantage of this by participating actively in class and visiting them during office hours for discussions and guidance, and also in the leisure period.

Context:

Effective communication and collaboration with teachers are essential aspects of maintaining a successful educational institution. Building strong relationships with teachers not only fosters a positive work environment but also enhances the overall quality of education. Here are some key strategies to build and maintain strong relationships with teachers:

- a) **Transparent Communication:** The college encourages open and transparent communication channels between the students and the teachers. Regular meetings, such as faculty gatherings, workshops, and seminars, provide platforms for sharing ideas, concerns, and achievements. Emphasis is also given on communication with the college authority allowing teachers to express their thoughts and suggestions while ensuring that the administration listens attentively and responds constructively.
- b) **Professional Development of Teachers for benefitting Students:**
The college supports and invests in the continuous professional development of teachers by allowing them to participate in the different Orientation Programmes, Refresher Courses and other faculty development programmes to enhance their skills and knowledge. It also encourages teachers to organize workshops, training sessions, and conferences and also to participate in such programmes organized by other institutions.

Evidence of Success:

- 1) The Department of Philosophy in collaboration with the IQAC of the college organized a seminar on "*Various Branches of Philosophy and Their Inter Dependence (Indian)*" on 14-11-2019 and the number of participants was 47.
- 2) Tanchar Molla, Assistant Professor of Mathematics presented a paper entitled "*On Location of Zeros of Transcendental Entire Functions*" in the National Seminar on 'Mathematical Sciences' organized by the department of Mathematics, University of Burdwan on and from 09-01-2020 to 11-01-2020.
- 3) Tanchar Molla, Assistant Professor of Mathematics presented a paper entitled "*A Note on the Location of Zeros of Entire Functions of Finite Order in a Certain Domain*" in the National Webinar on 'Mathematical Perspective of Covid 19 Outbreak: Predictions, Precautions and Preventive Measures' organized by the department of Mathematics, Sidhu Canho Birsha University on and from 11-06-2020 to 12-06-2020.
- 4) Tanchar Molla, Assistant Professor of Mathematics, participated in the "Science Leadership Workshop" in collaboration with 'Science Academies' online, organized by the Central University of Punjab, on and from 22-06-2020 to 28-06-2020.



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- 5) Tanchar Molla, Assistant Professor of Mathematics presented a paper entitled *“On the Generalization of Enstrom-Kekeya Theorem for Entire Functions”* in the International Web-Conference on ‘Complex Analysis and Differential Geometry: Revisiting’ organized by the department of Mathematics, Sidhu Canho Birsha University on and from 29-06-2020 to 30-06-2020.
- 6) Amritendu Roy, Assistant Professor of Economics and Tanchar Molla, Assistant Professor of Mathematics participated in a 4-week induction/orientation programme on *“Faculty in universities/Colleges/Institute of higher education”* organized by Teaching Learning Centre, Ramanujan College, University of Delhi, under the aegis of MHRDC, ‘Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching’ on and from 26.06.2020 to 24.07.2020.
- 7) Arnav Debnath, Assistant Professor of Political Science presented a paper entitled *“Radical Ideas, Identity and Womanhood: ‘Madhabilata in Samaresh Majumder’s Novel’* organized by Berhampore Girls College in collaboration with the University of Kalyani in an International Seminar on ‘Literature, Culture and Society: Interrelations and Search for Identity’ on and from 14-02-2020 to 15-02-2020.
- 8) Manas Kumar Das, Assistant Professor of History presented a paper entitled *“Epar Ganga, Opar Ganga: Uponnyaser Notun Sangjojan’* organized by Berhampore Girls College in collaboration with the University of Kalyani in an International Seminar on ‘Literature, Culture and Society: Interrelations and Search for Identity’ on and from 14-02-2020 to 15-02-2020.
- 9) Dr. Sandip Kumar Rajak, Assistant Professor of Chemistry, presented a paper entitled *“Corelating the Site Selectivity of Protonation in Some Ambidentate Molecules in terms of the Dual Descriptor”* in an International Seminar on ‘Innovation, Expansion, Impacts and Challenges in Chemical and Biological Sciences”, organized by the department of Chemistry, Surendranath College on and from 08-01-2020 to 09-01-2020.
- 10) Dr. Sandip Kumar Rajak, Assistant Professor of Chemistry, presented a paper entitled *“A Correlation of the Drug Activities (Anti-Bacterial) in the Structure of Some Hetero-cyclic Compound Containing Benzimidazole and Beta-Lactam Moiety in Terms of the Density Functional Descriptors – A QSAR and QSPR Study”* in an international symposium on ‘Current Trends in Chemistry”, organized by the department of Chemistry, Diamond Harbour Women’s University on 10-01-2020.
- 11) Dr. Sandip Kumar Rajak, Assistant Professor of Chemistry, presented a paper entitled *“Evaluation of the Protonation Energy of Molecules using Density Functional Theoretical Reactivity Descriptors”*, in an International Seminar on ‘Advancements in Chemical Science: Issues and Challenges’, organized by the department of Chemistry, Bidhan Chandra College on and from 04-02-2020 to 05-02-2020.

Problems Encountered and Resources Required:

However, various challenges can arise when attempting to foster these connections. Here are some problems encountered and the resources required to address them:

a) Student disengagement:

Problem:

Some students may be disengaged or uninterested in forming relationships with their teachers, which can hinder the establishment of meaningful connections.

Resources:

Implementing student engagement strategies, such as interactive classroom activities, group projects, and discussions, can encourage students to participate and build rapport with their teachers. Additionally, mentorship programs or peer support groups can help disengaged students feel more connected to the school community.

b) Teacher workload and burnout:

Problem:

Teachers may have heavy workloads, leaving limited time and energy for building relationships with each student individually.



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Resources:

Providing teachers with adequate support, such as reducing administrative tasks, increasing planning time, and offering professional development on relationship-building strategies, can help prevent burnout and allow them to focus more on student connections.

c) Personality and communication styles:

Problem:

Different personality traits and communication styles between students and teachers can lead to misunderstandings and challenges in relating to each other.

Resources:

Schools can conduct workshops or training sessions to enhance teachers' emotional intelligence and communication skills. Similarly, students can benefit from workshops that focus on active listening, effective communication, and empathy to help them relate better to their teachers.

c) Lack of shared interests:

Problem:

Students and teachers may not have many shared interests, making it challenging to find common ground for building relationships.

Resources:

Encouraging teachers to learn about students' hobbies and interests can help bridge the gap. Additionally, incorporating students' interests into class discussions or projects can make the learning environment more engaging and relevant.

e) Cultural and social differences:

Problem:

Cultural or social differences between students and teachers can sometimes lead to miscommunication or misunderstandings.

Resources:

Cultural competency training for teachers and students can promote understanding and respect for diverse perspectives. Creating a culturally inclusive classroom environment can also foster a sense of belonging for all students.

To address these challenges effectively, it is essential for our college to prioritize relationship-building initiatives, allocate resources for teacher training, and promote a culture of empathy, respect, and open communication within the educational community. Additionally, collaboration between teachers, students, parents, and administrators is essential for creating a supportive and nurturing learning environment where meaningful relationships can flourish.

[II] Title of the Practice: Rooftop Rainwater Harvesting

Objectives:

Rainwater harvesting has been practiced for centuries in various regions around the world, especially in areas with limited access to freshwater sources. The rains are important source of water and if we can harvest rain water, the scarcity of water can be eliminated to a great extent. The objective of implementing rooftop rainwater harvesting is to efficiently collect and store rainwater from rooftops for various purposes, such as domestic use, irrigation, groundwater recharge, and reducing the strain on conventional water sources. This sustainable water management practice aims to promote water conservation, mitigate water scarcity, and support eco-friendly practices.



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Context:

With increasing water scarcity and climate change concerns, rainwater harvesting has gained renewed interest as an eco-friendly and cost-effective water management strategy. Rooftop rainwater harvesting is particularly beneficial in areas facing water scarcity or unreliable water supply. For example, the underground water lifted by submersible pump in our college is full of water pollutants like iron and arsenic. By capturing rainwater from rooftops, which is otherwise wasted, we can harness a valuable resource and reduce dependency on traditional water sources. Additionally, this practice can help alleviate the burden on stormwater drainage systems and prevent flooding in urban areas.

Evidence of Success:

- a) **Improved Water Availability:**
One of the most significant successes of rooftop rainwater harvesting is the increased availability of water for various purposes. Collected rainwater is stored in tanks for providing an additional water source especially in the Chemistry laboratory and for watering plants in the college campus.
- b) **Reduced Pressure on Conventional Sources:**
By utilizing rainwater, there is less stress on groundwater reserves. This has decreased the water shortages during dry months and improved overall water security.
- c) **Financial Savings:**
Implementing rooftop rainwater harvesting has led to cost savings to some extent for our college through the reduced electricity bills.
- d) **Eco-Friendly Practice:**
Rainwater harvesting is a sustainable and environmentally friendly approach to water management.

Problems Encountered and Resources Required:

Rooftop rainwater harvesting is an excellent practice. However, implementing this technique faces certain challenges. Here are some problems that are encountered and the resources required for best practices on rooftop rainwater harvesting:

- a) **Structural Integrity and Load-bearing Capacity:**
Problem:
One of the primary concerns is whether the rooftop is a concern as the rainwater storage tank puts additional weight on the roof.
Resources Required:
Structural engineering expertise is needed to assess the load-bearing capacity of the roof and design the rainwater harvesting system accordingly.
- b) **Contamination and Water Quality:**
Problem:
Rooftop surfaces sometimes accumulate dust, debris, and pollutants, which contaminate the collected rainwater.
Resources Required:
Filters, gutter guards, and first flush devices need to be installed to prevent debris from entering the storage tank. Though we regularly maintain and clean the rooftop and the system to keep water quality hygienic.
- c) **Overflow and Disposal Management:**
Problem:
During heavy rainfall, excess water overflows from the storage tank, causing erosion and potential damage to the college building and the college foundation.



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Resources Required:

The college is planning to install appropriate disposal mechanisms in near future.

The college exercises regular inspections and periodic upgrades for the maintenance, monitoring, and improvement of the rainwater harvesting system.

Debasis Bandyopadhyay

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