PROFESSIONAL DEVELOPMENT PROGRAMMES

1. Course title: Discovering the Magic of Teaching and Learning Biology for 21st Century Classroom"

Rationale

This professional development program aims to provide a platform for Biology Teachers to learn and enhance their content knowledge and use of emerging pedagogies and ICT that are most relevant and contextual in delivery of Biology lessons. It is designed to respond to the educational practices of the current and future and will enable participants to develop skills of harnessing the benefits of technology and use it for the effective delivery of Biology lessons and to make learning more relevant and meaningful. Eventually, the training will enable participants to prepare interactive, engaging and immersive lessons using technology for teaching, learning and assessment.

Learning outcomes

The training aims to provide both specific and wider influence for participants with regards to knowledge and skills enabling them to:

1. learn and re-learn about the selected vital human organs,
2. apply 21st century skills in designing teaching, learning, and assessment in their classrooms,
3. use knowledge and skills to purposefully integrate ICT in their classroom teaching,
4. develop the knowledge and skills to understand and conduct scientific inquiry,
5. remain contextual with the evolving trends in biology education.

Course Content

1. Anatomy, Physiology, and Issues of the Human Heart using 3D Models, Animations and Simulations.
2. Plant/Animal Identification/Classification using Google Lens, Online Identification Apps, and Quadrat method. Google Lens
3. Scientific Quadrat Method
4. Use of Virtual Labs
5. Designing interactive, engaging biology Lessons for effective teach.

Duration of the programme: Five days with four sessions in a day.
Fees for the training programme: Nu. 3500/Participant/Day = Nu.17500/Participant (the fee is inclusive of access to training materials, one working lunch, morning and afternoon tea with snacks; exclusive of accommodation, water, electricity and other meal charges).

2. Course title: Innovation, Creativity and Transformation of Chemistry Contents and Pedagogy

Rationale

This professional development aims to inculcate in the Chemistry teacher's innovative technology and pedagogies such as Design Thinking, 3Ds, flipped classroom, Virtual Laboratory, Laboratory Based Learning, student friendly assessment practices and update on recent development in the field of Chemistry. With a solid grounding in the innovative and creative pedagogies and hands-on activities, this professional development programme will enable chemistry teachers to cultivate positive attitude in the students towards Chemistry as a subject of study and scientific mindset. Further this professional development will help develop practical skills and techniques and hence facilitate better understanding of the difficult concepts in chemistry.

Objectives

1. Embrace 21st century pedagogy such as Design Thinking, Inquiry Learning, 3Ds (Discover, Design & Demonstrate), Flipped Classroom, etc, and
2. Carry out experiments using virtual laboratory;
3. Integrate innovative pedagogies such as flipped classroom, design thinking etc in the teaching of Chemistry;
4. Apply the innovative pedagogy in the teaching and learning of chemistry;
5. Integrate digital tools such as YouTubes, virtual Lab., Padlet, nearpod in classroom teaching and learning;

Course Content

1. Introduction to Innovation, creativity and transformation of chemistry content and pedagogy Theoretical concepts: Mole; Concentration concept.
2. Innovation & Creativity in Laboratory Based Learning
3. Pedagogies: Innovation and creativity through Laboratory Based Learning;
4. Concentration Concept (Molarity/Normality/Molality % (V/V, W/V) strength, neutralization
5. Design Thinking; 3D's (Discover, Design & Demonstrate); Flipped Classroom.
6. Design Thinking as 21st Century Pedagogy
7. Digital tools in Classroom
8. Virtual Laboratory Technology
9. Addressing Misconceptions in Chemistry.

Target participants: Chemistry teachers of MSS, HSS & Science teachers from LSS

Duration of the programme: 5 days

Fees for the training programme

Virtual = Nu. 2000 per participant per day (Nu.10000.00 for entire programme)

Face to face = Nu.3500.00 per participant per day (Nu.17500.00 for entire programme)

Package per school = Nu.50000 for 5 participants

3. Course Title: Teaching Calculus with Technology

Rationale

This Professional Development will equip participating teachers on how to use technological tools as an approach to teach higher secondary calculus so that school students develop deeper understanding of calculus concepts and its application in a more meaningful way than just procedural one. This in turn will help students build confidence in their calculus ability, enjoy and pursue Mathematics oriented careers. It will also help teacher participants promote the use of visual thinking through development of extremely useful calculus related activities as an alternative approach to procedural or analytic approach. This intensive seven-day PD encompasses tasks on the use of technological tools, intensive discussions brainstorming based on the reading resources (articles) and presentation after every session.

Aims and objectives

This PD aims to prepare teacher participants on effective use of technology tools (GeoGebra and Geometer's Sketchpad) as a transformative tool in teaching calculus for higher secondary schools of Bhutan. This is because they provide learners to visualize and manipulate abstract concepts much more meaningfully. Further, the participants will be made to explore, develop models and other forms of resources through use of inquiry or problem-solving approaches so as to deepen concept development in calculus. These explored or evaluated resources /models can be a ready-made resource to be used in calculus class.

Course Content

1. Introduction to Mathematical Technology
2. Exploration of concept of Limit
3. Introduction to derivatives
4. 2nd Derivatives
5. Integration
6. Differential Equations

Target participants: Higher Secondary School Mathematics teachers

Duration of the programme: 7 days

Fees for the training programme: Nu. 3500 /Participant/Day (the fee is inclusive of access to training materials, one working lunch, and two times tea serving; exclusive of accommodation, water, electricity and other meal charges).

4. Course Title: Social Assessment & Development Communication

Rationale

This training is designed to support local government leaders and field workers of Civil Society Organizations to equip them with knowledge and skills to carry out social assessment (key components) for developmental activities in their Gewogs and project areas respectively. This will help the participants reflect and evaluate various strengths and areas of opportunities in their own community. Training will help participants evaluate the dynamics of development, key challenges and barriers of development through reflective discussion and sharing ideas with other participants. The participants learn to identify and assess key social issues and problems, using participatory approach to development and implementing realistic interventions and strategies to networking and collaboration with stakeholders. Further, the training will also equip participants with knowledge and skills of using effective communication strategies and skills as a tool for sustainable development.

Learning outcomes

By the end of the course, the participant will be able to:

1. identify the critical needs for development;
2. exhibit knowledge about sustainable development and key issues;
3. conduct social assessment using social assessment process and tools;
4. identify the development needs and priorities in their own Gewogs;
5. prepare roadmap for addressing key development challenges at Gewog and community project level;
6. adopt efficient communication skills and strategies for development.

Course Content

1. Overview to development needs and approach
2. Social assessment for development
3. Behaviour and social change model
4. Communication for behaviour and social change
5. Participatory development strategies and tools
6. Monitoring, evaluation, and accountability

Target participants: Local Government staff and Civil Society Organizations

Number of participants: 20-30

Duration of workshop: 4 days (4 sessions per day)

Fees for the training program: Nu. 3500 /Participant/Day (the fee is inclusive of access to training materials, one working lunch, and two times tea serving; exclusive of accommodation, water, electricity and other meal charges).

5. Course Title: Mental Health and Well-being

Rationale

The importance of mental health in the society we live in today cannot be overstated. Rapid advancements in technology, greater global connectedness, and changes in lifestyles have produced both opportunities and challenges that have a significant impact on people's mental health and well-being. The fast-paced nature of modern life regularly raises stress levels. People are constantly exposed to a variety of stresses, including pressures from their work, financial concerns, and personal challenges. These changes can be challenging to adapt to, which can lead to further anxiety and uncertainty. The digital age has brought with it a wealth of information and constant communication. Although there are many benefits to this, it can also lead to information overload, resulting in overwhelming stress and pressure. Even while advances in technology have made it simpler to communicate with people around the world, the majority of people may still feel isolated and disconnected.

Learning Outcomes:

1. Discuss the relationship between mental health and physical health in enhancing overall well-being;
2. Analyze the importance of self-care to cope with stress and everyday challenges;
3. Discuss the importance of developing positive thinking, regulating emotions, cultivating acceptance and building resilience;
4. Identify and reframe negative thoughts with more rational and positive thoughts;

5. Apply mindfulness techniques to cultivate emotional balance and enhance their ability to respond to challenging situations with clarity and compassion;
6. Practice mindfulness techniques to cultivate self-compassion and develop accepting attitude towards life;
7. Integrate mindfulness practices into daily routines to build resilience in order to promote long-term physical and emotional well-being;
8. Demonstrate the practices of "Sorig-Zhiney and Luejong" as a holistic approach to promoting health and well-being; and
9. Create a personalized self-care plan that includes specific strategies and techniques to promote physical, emotional, and mental well-being.

Course Content

1. Mental Health and Well-being – why is it important?
2. Understanding self-care
3. Self-Care: PEAR – (Positive Thinking; Emotional Regulation; Acceptance; Resilience)
4. Self-Care: PEAR – (Positive Thinking; Emotional Regulation; Acceptance; Resilience)
5. Self-Care: PEAR – (Positive Thinking; Emotional Regulation; Acceptance; Resilience)
6. Self-Care: PEAR – (Positive Thinking; Emotional Regulation; Acceptance; Resilience)

Number of participants: 25
Fees for the training program: Nu. 3500 /Participant/Day (the fee is inclusive of access to training materials, one working lunch, and two times tea serving; exclusive of accommodation, water, electricity and other meal charges).

6. Course Title: Enhancing Technological Pedagogical and Content Knowledge (TPACK) of Secondary Physics Teachers for 21st Century Classrooms.

Rationale

This professional development aims to provide secondary school physics teachers with new insights and hands-on practices in designing lessons and activities to enhance student learning through the use of scientific inquiry, design thinking, and modelling embedding technology tools. The teacher participants will also go through hands-on experience in designing interactive and innovative classroom activities to enable students to enjoy learning of physics as a joyful, exciting, and purposeful educational experience.

Learning outcomes

By the end of the PD, each participant will be able to:

1. demonstrate scientific inquiry skills in designing physics activities to engage the students;
2. apply simulation with 5E (Engage Explore Explain Elaborate Evaluate) approach to demonstrate physics concepts and address misconceptions;
3. perform physics experiments using virtual lab and science cycle;
4. apply modeling approach using Modellus to create models to represent, explain and predict physics concept and phenomena; and
5. apply design thinking principles and processes to develop a teaching learning material for physics classes.
6. design and implement a lesson plan that integrates technology in a meaningful way, using the TPACK and SAMR frameworks as guides.

Course Content

1. Introduction to the Educational Technology
2. Simulation in Physics
3. Virtual lab in Physics
4. Modeling in Physics
5. Design thinking in Physics.

Target participants: Secondary Physics School Teachers with 25 – 30 participants in each cohort.
Course Duration: 6 days
Fees for the training programme: Nu. 3500 /Participant/Day (the fee is inclusive of access to training materials, one working lunch, and two times tea serving; exclusive of accommodation, water, electricity and other meal charges).

7. Course Title: Professional development for parents on understanding your child

Rationale

Parents, as primary caregivers, play a crucial role in shaping and nurturing the growth and development of their children. Moreover, parents hold a special and influential position in the lives of their children. However, despite the fundamental significance of parents in the lives and development of children, they are often overlooked and excluded from the design of interventions aimed at addressing issues concerning youth and adolescents. In light of this, the purpose of this professional development is to help parents in recognizing and understanding the growth and development of their children, as well as the crucial role they can play in facilitating their children's connection and integration within the family structure. Further, despite the implementation of various intervention measures by different stakeholders, there has been a disconcerting increase in youth- related problems such as substance addiction, the influence of social media, academic performance, and mental health issues. Consequently, in order to effect societal change and tackle these emerging issues pertaining to children, it is imperative to direct our attention towards parents. Thus, the professional development programme aims to equip parents with essential knowledge and skills of "Understanding Your Child" in order to enhance their capacity for effective parenting as the primary caregivers of their children. Through this professional development programme, parents will have the opportunity to enhance their parenting skills, communication strategies, and problem -solving abilities. This, in turn, will ensure that children are provided a secure and stable environment in which they can flourish and cultivate positive relationships, thereby fostering their overall well-being.

Learning Outcomes

At the end of the professional development, each parent participant will be able to achieve the following specific learning outcomes:

1. a deeper understanding of the key aspects of child and adolescent development;
2. equip parents with practical approaches to foster healthy emotional development in their children;
3. acquire knowledge and skills to effectively recognize and respond to their child's emotions;
4. develop effective communication skills in parents to build strong emotional connections with their children;
5. model conduct and behaviours (covert and overt) to encourage empathy, and healthy emotional expression in their children;
6. apply knowledge and skills to monitor and guide their children's use of technology, social media engagement, and substance – related behaviours;
7. familiarize parents with different parenting styles and their impact on child development;

8. practice open communication to build trust and address problems;
9. demonstrate skills to implement positive discipline techniques that encourage cooperation and self-regulation in their children; and
10. create a safe and nurturing home environment for the wellbeing and development of children.

Course Content

Unit 1: Understanding child and adolescent development

1. The Art of Parenting
2. Understanding and Responding Emotions
3. Developing Empathy and Perspective Taking
4. Power of Language
5. Promoting Social Emotional Learning towards Sound Mental Health and Well-being
6. Impact of Parenting on Children's Well-being

Unit 2: Challenges and Opportunities for Children

1. Challenges and Opportunities in the Modern World
2. Monitoring and Guiding Technology Use
3. Navigating social media Online Interactions:
4. Substance Abuse Prevention and Intervention

Unit 3: Caring for Your Children

1. Exploring Different Parenting Styles
2. Fostering Positive Discipline (Warmth & Structure)
3. Building Emotional Connection and Attachment:
4. Promoting a Safe and Nurturing Home Environment:
5. Positive Reinforcement and Encouragement
6. Modelling and Teaching Respectful Behavior
7. Balancing Autonomy and Guidance
8. Self-Care for Parents

Number of participants: 25

Fees for the training program: Nu. 3500 /Participant/Day (the fee is inclusive of access to training materials, one working lunch, and two times tea serving; exclusive of accommodation, water, electricity and other meal charges).

8. Course Title: Certificate course in QGIS

Rationale

The provision of a professional development program on QGIS is justified by the need to enhance the spatial data analysis skills of professionals in various fields, such as geography, urban planning, environmental research, and natural resource management. In a rapidly advancing digital age, GIS technology has become increasingly salient in both the public and private sectors. Developing expertise in QGIS, a free and open-source GIS software, will enable professionals to handle complex spatial analysis tasks, including geoprocessing, georeferencing and visualization of geo-data. This programme will bring numerous benefits such as an improved ability to make informed decisions, communication with stakeholders and data presentation. Additionally, the introduction of such a training program will enable organizations to save costs by leveraging open-source technology, and allow a streamlined flow of work for its professionals. By providing professional development opportunities to enhance QGIS skills, organizations can equip their employees with an essential skill set, which will ultimately lead to higher productivity and better performance.

Learning outcomes

By the end of the course, the participant will be able to:

1. identify the QGIS platform and its components;
2. create a new project in QGIS;
3. add data layers to their QGIS project;
4. use the various data formats in QGIS such as vector and raster data;
5. manage data in QGIS using techniques such as creating new data layers and importing data from external sources;
6. use the vector data analysis tools in QGIS;
7. process vector data and conduct spatial queries;
8. use the raster data analysis tools in QGIS;
9. process raster data and conduct raster data queries;
10. create visualizations in QGIS using techniques such as configuring symbology and displaying data using styles; and
11. use labeling tools in QGIS.

Course Content

Unit I: Introduction to QGIS
Unit II: Understanding QGIS Data and its Management
Unit III: Vector and Raster Data Analysis in QGIS
Unit IV: Visualization in QGIS
Unit V: Geoprocessing and Automation

Number of participants: 20 Participants
Duration of workshop: 5 days
Fees for the training program:

1. Cost per participant = Nu. 3,500 per day for 20 participants or more
2. Cost per participant = Nu. 4000 per day for 15 or less participants