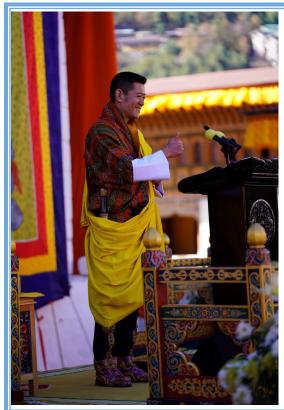


# নম্ম শ্রুব শূর্দম মাদ্র দুম দ্বী

### SAMDRUP JONGKHAR JOURNAL



VOLUME III YEAR 2021



"We must realize that knowledge and skills, if not renewed, will soon become obsolete. We must inculcate in us a culture of lifelong learning."

- His Majesty King Jigme Khesar Namgyel Wangchuck (His Majesty's Address to the Nation on the 114th National Day, Tashichhodzong)

Dedicated to 114<sup>th</sup> National Day:

BHUTAN FIRST

### Tahsi Delek!

Dasho Dzongdag was honored with Lifetime Service Award at the Dzongkhag Tshogdu Hall in an august gathering of other recipients of Royal Civil Service Award on December 9, 2021.



#### **CONTENTS**

| SL.<br>No. | TITLE   | PAGE<br>NUMBER |
|------------|---|----------------|
| 1          | <u> </u>  | 1              |
| 2          | বর্বুনাক্টিজ-বঙ্গ্র-দা  | 2              |
| 3          | ય'સ'5્વ'ત્રવું, કુંથા   | 3              |
| 4          | নশ্ৰীশ্বংনন্ 'ঐল্পংশ্ৰী'ৰ্ষ্পুৰ্ব 'ঠ্টল্  | 4              |
| 5          | र्ह्म चेत्र कुषाया  | 5              |
| 6          | क्रिं चदे महिम्र मित्र  | 5-6            |
| 7          | ઽૹઃમૡ૾ૺ૽ૹૼૹ <sup>ૢ</sup> ઌ૽૿ૢ૽૽ઽૢ <b>૱</b> ૠૢૢ૿ઌૣ   | 6-7            |
| 8          | भु <u>ँ</u> .क्र्या   | 7-8            |
| 9          | র্ম্ববি:শ্ববশ-শ্বদ্ধন্ম শ্রেম্ব   | 8-9            |
| 10         | নম:শ্র্রুণা   | 10             |
| 11         | ર્સું : ર્કેન્સ ગામ્સ : માન્ય | 11-12          |
| 12         | र्स्चेन:चुदि:चर्स्ट्रेन्:र्ड्स  | 12             |
| 13         | हुतुःश्चितःस्वीतः हुपुः नश्चितः छ।  | 13             |
| 14         | त्रचुमामी'न्धतःर्वे।  | 13-14          |
| 15         | ત્ર નુવાયતે ત્રા ત્યા વારા ક્રેંબ કેંત્ર યા ત્રા ફેંગ ત્યા  | 14-18          |
| 16         | ୩ଈ'ଲ୍ଲି-'୳୕୕୕୕୕୕୕   | 19-20          |
| 17         | Colposcopy in Samdrup Jongkhar  | 21             |
| 18         | First Professional Hairdresser at Tsangchuthama — The PSL Beneficiary   | 21-22          |
| 19         | What IGNITED Gawa?  | 22-24          |
| 20         | Mass COVID-19 Vaccination Programme in Samdrup Jongkhar   | 24-25          |

| SL.<br>No. | TITLE   | PAGE<br>NUMBER |
|------------|---|----------------|
| 21         | MY KING   | 26             |
| 22         | Peer Teaching: Impact on Students' Academic Achievement and Learning Motiva-                                      | 27-38          |
|            | tion towards Mathematics  |                |
| 23         | Oh Lord!  | 38             |
| 24         | What's There in The Name?   | 39             |
| 25         | Imperial Factors that Influence Academic Performance in Secondary Grade Results                                   | 39-43          |
| 26         | A Dream Come True Moment  | 44             |
| 27         | My Sincere Prayer   | 44-45          |
| 28         | My Little Ones  | 45-46          |
| 29         | Unfinished Masterpiece  | 47             |
| 30         | Perspectives of Phuntshothang MSS on Bhutan Baccalaureate   | 48             |
| 31         | Feedback Mechanism in School  | 49-50          |
| 32         | Post-Pandemic Education   | 50-52          |
| 33         | Best Practices at Gomdar Central School (HSS)   | 52-56          |
| 34         | CODEMONKEY— The Royal Soelra  | 57-58          |
| 35         | Dropping Out of School  | 58-59          |
| 36         | Greed   | 59-60          |
| 37         | An Endeavor towards Chilli Self-sufficiency   | 60-61          |
| 38         | Citrus Canopy Management Initiative: A story of positive impact in Orong Gewog                                    | 62             |
| 39         | Successful containment of a local outbreak of COVID-19 through community isolation and quarantine in rural Bhutan | 63-68          |
| 41         | Royal Civil Service Award 2021  | 69             |
| 42         | Winners of Art & Essay Competitions on the theme "BHUTAN FIRST"   | 70             |

# (श्रुवश्राहे:दैव:र्याके)

कें.लीज.खेट.षष्रभ.पटं.चयु॥ ट.चक्स.पर्चिंग.मु.मैजा.षच॥ मुलावनायदी दराचलुगाया थी। हे स्रावदारी देशे के स्र्वेगा खिटा क्रियाका यदी बदा क्रिया हो। दिवा क्रिया दिया क्रिया विवास क्रिया के.शयु.र्थं तामा.लूरं.श्री। यट.ता.शटश.मैश.क्र्या.यही। चन्नायहेव म्नवर्को यने खा। हेरायशन्नाय हें रावु मी माब्रुबायमाम्बरम्यते वित्रुप्ति मुद्धे प्राचेत्र प्रवित्र विवासमा र्देशसुः अहवः द्वरः सेर्-रुरः॥ सर्वः र्वेशः र्वंशः ग्रीशः द्वारः सेरः॥ दुसः र्क्षेत्रः क्षेत्रः बुचः सेत्रः सम्। सर्द्रः चुः च बनः र्थेः मात्रनः सी। इ.कायय. रुप. म्.क. अष्ट्यी श्री. कु.की. प्रमार रूपी मुन्यार्श्वर्मे मुक्तरप्रतार प्रता वति वात्रायात्र मुक्तरप्राया विवास र्यः क्रुंबः र्रः चतुः क्रुंवः वच्याः रः चड्बः त्व्युंगः ग्रेः क्रुंवः वचा मान्मभुत्रमाहेते नगातः हेता। हैटायमान् गतः हैन लुगो मी.देपु.र्झैल.त.पट.चपु॥ धिवाश.श्रूशश.क्ष्य.क्रीश.सूर.च॥ ८.चरुअ.लूरअ.कु.र्र्थ.जी। श्रेच्या.इ.अकूवा.र.अकुथ.यूरी ૹ૾ૺૹ૽૱ઌૹઌ૽૽ૺૹ૾ૢૼઽૹઌૹૢૢૢૢૢૢૹ૽ૹ૽૽૱ઌૡ૽ૺૹૢૢૢૼ૱ઌઽ૽ૺઌૹૢૢૢ क्षेर-विर-र्युव-प्रवेश्वित-त्यवा क्षेत्र-प्रवाधिक-प्रवेश-प्रवेश

रिचलकामाहकः र्स्वितास्या गोरि श्विंचान्द्रिकान्त्राचा माः ही स्विंकान्त्रः श्विंचामा छे।

# (पर्वेग.मैज.नधु.न)

क्र्यःम्च्रीतः त्यायः त्यायः त्यायः क्ष्यः व्यायः व

श्चिषःस्थःयाञ्चयात्रःग्चीत्रःस्यःश्चीता। श्चेतः।ययःतर्त्रः वरःत्विस्यः र्ल्या। श्चेतः।ययः वर्षः वरः वर्षः वर्षाः। श्चेतः।ययः वर्षः वर्षाः वर्षाः। श्चेतः।ययः वर्षः वर्षाः वर्षाः। श्चेतः।ययः वर्षः वर्षाः वर्षाः। श्चेतः। श्च

मुग्रभः देगा आवश्र पदे मुः अर्थे । मुः अर्थः वनः ग्रवह तरः अदः दिन्। શું. ૮ વદ. મૈળ. ત્રું વાળી ફ્રિય. ફ્રિય. ફ્રિય. લેટ. વર્ષેય. ત્રું વાળના हें नर्ड्द क्रिंव स्रिव स्रिव स्था मुल संदे नर्ड्द वस तन न ने कर्म मिल ल्.बट्यावीश्वाचर्यस्याचित्रा पर्वेबाक्षणत्वस्याम्बर्धा तर्त्रुगामी मुलायन तर्ने वरा। मुलायंत्रे सुमातम् नवेश र्सिन्। स्रमात्याद प्रतेषा प्रतेष्ठ स्था व्याप्त स्था स्थापन स्थापन स्थापन स्थापन स्थापन स्थापन स्थापन स्थापन स्थापन स क्षे<sup>.</sup>द्वटःत्वचर्यःग्रीयःवङग्वयःहे॥ वङ्ग्युदःवःसटःस्वयःसह्दःर्खेद्॥ शु.सुन.देगाय.र्स्या.सूचा.देटा। शु.रेचट.विश्वसाच झे.र्जयशालया। त्वुगायते से से राह्मस्य त्या विषय देव के रायस मार्य रहें। सक्ष्यत्वरायह्मायास्त्रीरायो। यह्मास्त्रीरायायाच्यास्त्रीया सर्वत्रच वार्चा कें कि से प्रमान कर केंद्र की स्वर्थ केंद्र की स्वर्थ केंद्र की स्वर्थ केंद्र की स्वर्थ केंद्र त्र्व्वा मे १२ स्राप्त व्यापा विष्टा त्र्यम् मुयापित तर्त्व्याप्यतःत्वरशायवितः वित्राणी श्रुपशः दरः अर्वेदः राषेदः वेति

रबुग्-पतं त्यन्यायां स्वायः व्यव्याः स्वायः व्यव्याः स्वायः स्वायः स्वायः स्वायः स्वायः स्वायः स्वयः स्वायः स्वयः स्वयः

# [य:बाइवायतीर्ड्स]

मासुरानवरावार्वेदीवरासु॥ नमादाद्वेदारुदान्त्रीपा *`*हेर'षर'ञ्चर'ञ्चर'इत'तु अह्य'पर्वे रर'र्पर'श्चेत्र'तर्तुगा ८.तर्भासीयाषुषु,र्यस्था विःस्वात्रस्य वर्षा तुवायाये<u>न परायर्</u>डेवायी। देःषीः देव उदायाया। कर्यान्दाकुं अर्थे। वेदायक्षी केदायक्षी स्थान र्रा मिष्यं संस्थित रहरा। सद्ग्रस मिष्टिम र्स्नि र प्राप्ति स्थान श्रे.ष्ट्रं.र्द्रव.तंत्र्वं.वृह्णा ल्यं.रेथं.श्रीरं.तंत्रं.रेथं.जी यम्भात्राम् वित्राचित्रम् । वित्रम् वित्रम् वित्रम् बःचतः व्हें : यमः तस्रुमः हे॥ ३ वः चते : महिन् : यमः तस्रुमः हे॥ . ત્રું અત્ર તે કુ. જેવા છે. ત્યાર ત્યા કુમ यर.कर् सुंर्डवाबोर्पयम्। र्वायःश्चेर्परराखुंबायःर्वेगा गवर मुःस्यापञ्च मु। मुःस्यार ५ स्टर्से १ स्टर्स न्द्रे'न'म्बद्धायस्याञ्चा मद्दान्यमार'ईदाके'र्स्टा इवि उव माद्रेया की मावह प्राती। द्याय प्राप्त की मावही मावही मही। बे'कें'चकु'से'येव'रुटा| देव'यव'बह्य'चर'दर्गेव'पया| चुर्बे देवे देवे देवे हे हैं। इसे का इस वर्गे देवा है। स्रमास्रेन् मन्द्रमालु नदी। नुर्वे स्ति मेन्से मा चगाय:इव:के:चर्व:इव:उवा। श्लाकें:कु:यम:देर:चर्वा। नुःर्वे के मिडमा र मिशा नगः भिशः र्श्वेद प्यसः लु मी।

कें मार्डमा ख़ुर्जा र्क्सेन देश हैं या मार्ची र्क्सेय दर्सेन मार्केन

# नग्रीसःचर्े योगसःग्रीःर्श्वेत्रः कैंग

चित्रसः न झेंद्रः प्रचित्रस्य त्रात्रसः त्रात्रसः त्रात्रस्य । प्रस्यः त्रव्यसः स्रोत्ते । प्रस्यः प्रक्रियः य विस्रसः प्रमुद्धः प्रचित्रसः स्रात्रसः त्रात्रसः त्रात्रसः त्रात्रसः स्रोत्ताः विस्रसः प्रमुद्धः प्रचित्रः स्र

मुण पर्द्ध अर्थन विषय प्रत्य प्रत्य

श्रैण.नपु.क्र्य.मैज.भु.रेनट.भटप.र्थनम.भक्र्यी मैज.नर्थ्य.प्यन.रि.नर्जुम.टे.जू.ट्.नर्थी विप्र्र.नपु.र्थम.क्र्य.न = ट.त्पु.रेथम.ट्राप्त.

| मुल्यान्वर्त्तः स्थ्रां स्वाप्तः स्वापतः स्

वयमःभेमायर्भमायर्भमायर्भमायक्षेत्रायक्षेत्रायक्षेत्रोत्राम् । क्षिः ख्रेतः स्प्राम् प्रम्यान्त्राम् वर्षायाः

र्मणःस्वान्त्रः स्वान्त्रः स्वान्त्रः स्वा ।

र्केशःकुषःचित्रःचत्रेः धुग्रशः र्देवः क्षुवः ग्रुचः र्वेगा व्याः न्वः ग्रुषः चर्द्धवः श्रुः कें स्टः चरः र्वेगा

मुल'नर्ड्,व'र्स्नेव'त्रनर्यात्रह्मायाःमाणट्रकगयःर्भगा रट'ल'भ्रीयाःम्बुट्यामेयार्णेव'र्स्ट्रर'स्रेनयाःग्रीया ।

धैनाःभेनःभेनश्यतः र्स्केन्यः प्रतः क्रिंतः प्रतः । स्नृतः प्रतः क्रिंनाः नीः चित्यः सन्तः स्रोतः त्राणः । स्नृतः प्रतः स्रीतः प्रतः स्रोतः स्

न्यार्केशन्तरात्तुमा नमाया न्यरार्कायार्भ्याम्यात्रेगम् नम्यसामुनार्थेट्यायाया

### र्त्तेचा देते कुणर्या

यन्द्रसञ्ज्ञान्त्रेन्द्रम् क्र्यान्य क्ष्या हेत्र क्ष्यान्य क्ष्या क्या क्ष्या क्ष्या क्ष्या क्ष्या क्ष्या क्ष्या क्ष्या क्ष्या क्ष्या

# तचें थें वेग्रबाक्षेत्र न्या क्षेत्र म्यून देश पड़ाया हें कें ग्राईन प्रावेद देश क्षेत्र म्यून स्था

### क्रुं चदे गान्य गावी

यक्षः स्तरः क्रं स्वायः वाश्वयः क्षेत्रः वाष्ट्रस्वः स्वायः स्वयः स्वयः

# कें दिर द्वर प्रमा हिर क्षेया कि देर प्रमेर दिया की मान

# **५८४५८५५५५५५५५५५५५५**

क्षे.भ.ट्य.सूट.चोष्याज्ञीय.क्षेट.च.लुप्रा। ट्य.तपु.क्ष्य.यु.स्.च.भ.भह्ट.युणा भ्यंत्र.क्ष्य.म.जुष्य.क्ष्य.म.जीष्य.क्ष्य.मा

# तन्ने भी देव तहिंदा हैं। दे त्वाय र्से प्रमृत्कृत या यदे प्रम्म

### **聚美如**

यसःगठेशःग्रीशःश्चनःकेःगलुरःगर्धेगःदि। । र्त्तुं तरी सु परे दे पर पेर्ट्स स्रोति । वरःवेशःर्थेवःचरःवर्द्धरःवेरःसुरःषरः।। धुःरे.च.मालव्य.चञ्चुय.चञ्चेत्रः पूर्वा चेरा । स.मुभ.स्वा.जिर.तर.चाल्चा.पक्का.चरा । रटम्अद्ये हैं रु पत्ति वा सर अस्। भ्रीयालद मुन्ना अर्घेट के येग्ना दर्ग ने न गञ्जम्भायहताकृताओं क्रियान्यी सान्ता ष्रअर्व्योक्तेम्द्रप्रम्हित्रदेश्रि बेन्द्राम्बदायशयर्केयाने र्मेद्रके थी। क्षे<sup>.</sup>मात्रुतः मुर्नेरायम् अर्घेरः मञ्जूषा चेम। । र्केंब्रॱइसप्यासायइसप्द्यूरप्राराधी । न्र्मेय मालुर मार्थेम पर्केय नर र्देर से पर्ना लिज.पर्ट्र.नपु.सु.बाज.बी.बाजू.कूरना.जना । र्रम्बद्धारम्बिनायर्थेन विश्वेष्ट्रम्बर्धायरी । **तर प्रह्य क्रूप नर्जेश में ताज सूर ली** क्तु-र्धेव-५व-क्रेश-डेग-प्रहेव-रु-प्पर। । र्रम्बद्धान्याचित्रात्र्वितः द्वान्यस्य । ल्या-र्याचारान्यान्यान्यान्यान्यान्यान्यान्या

भ्रायन मित्र स्वर्थ स्वर्य स्वर्थ स्वर्थ स्वर्य स्वर्थ स्वर्य स्वर्थ स्वर्य स्वर्य स्वर्य स्वर्य स्

चर्कन् त्रम्थार्केमार्स्त्रेत्। र्स्त्रिनः मृत्रुनः स्त्रुतः सार्स्त्रेनः मृत्रुनः म

### र्श्विच मृदी मृद्या सूर्य ग्री र्स्निर प्यथा

पर्श्चीयमा.खुरी पर्श्चीयमा.खुरी प्रवित्ताच्चा, क्रियाच्चा, क्रियाच, क्रियच, क्रियच, क्रियच, क्रियच, क्रियच, क्रियच, क्रियच, क्रियच, क्रियच, क શ્ચેંતઃત્રાત્વરઃ દ્વાઃકઃક્ષેતઃત્રુધઃશ્વાન્યઃકૃતાઃશ્વાન્ય: પીયઃક્ષરાત્વાન્ય: ક્યાંતાના ક્યાના ક્યાંતાના ક્યાંતાના ક્યાંતાના ક્યાંતાના ક્યાંતાના ક્યાંતાના ક

શૂંત-પ્રશ્ન  $\alpha$  શ્ર્વેર.શૂંન છે. ત્રુંતા છે તે ત્રાપ્ત છે ત્રાપ્ત છે તે ત્રા ત્રાપ્ત છે તે તે ત્રાપ્ત છે તે તે ત્રાપ્ત છે તે ત્રાપ્ત તે ત્રાપ્ત છે તે તે ત્રા ત્રા ત્રાપ

पक्र्यात्यीकात्मभैट्रेट्ट, अष्ट्राचन्नका प्रमाण्याकार्ष्का विष्टाक्षेत्र स्वाप्त्य प्रमाण्याक्षेत्र स्वाप्त्य प्रमाण्याक्षेत्र स्वाप्त्य प्रमाण्याक्षेत्र स्वाप्त्य प्रमाण्याक्षेत्र स्वाप्त्र स्वाप्त्य स्वा

इ.स्व.व.व.व.क्.लाक्ष्यः प्रचान्त्राच्याः स्व.च.च्.च.च्याः अर्व.चयः च्याः स्व.च्याः च्याः च्यः च्याः च

तवि की केंग्र हेत्यवर की क्षेंच देश दुगाया

### অমার্স্থ্রআ

चुन्न-त्रिन्न-त्रिन्तिः कु.पर्चनन्न-प्री.प्रचर-त्रिः वश्यान्द्र- वश्यान्य-विक्रिन्तिः क्रि.च.कु.कु.विन्न-त्रिन्तिः क्रि.च.कु.कु.विन्न-त्रिन्तिः व्यत्य-प्राप्तिः व्यत्य-प्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्राप्तिः व्यत्य-प्तिः व्यत्य-पत्तः व्यत्य-पत्तः व्यत्य-पत्तः व्यत्य-पत्यः व्यत्य-पत्यः व्यत्य-पत्तः व्यत्य-पत्यः व्यत्य-पत्यः व

चल्चीयान्यत्यत्रेत्राच्याः त्यात्रेत्राच्याः स्त्रेत्राच्याः स्त्रेत्यत्यः चवतः स्त्राच्याः स्त्रेत्यत्यः स्त्रेत्यः स्त्रेत्यत्यः स्त्रेत्यत्यः स्त्रेत्यत्यः स्त्रेत्यत्यः स्त्रेत्यत्यः स्त्रेत्यत्यः स्त्रेत्यत्यः स्त्रेत्यत्यः स्त्रेत्यः स्त्रेत्

तझे क्षे बेंद्र क्षेंपा क्षेंच मृद्धर य

# (र्त्तुः चे र्सेन्स्य मान्स्य स्टार्स्या मान्स्य प्राप्त

<u> मासुरःअर्केर्'यःदत्तुवः'र्वे'र्नोत्रःअर्केम्मासुम्। सुम्बर्रम्चेशयरःअर्देर्'रेमाप्वे'र्न्व'सू।</u> 3 मुेव'नर'कर'खेल'डेग'अववर'त्र्वेते'र्क्वेग्शा मुन'र्स्र्र'र्चेग्रथ'अर्द्ध्र 'डेग्'र्क्र्य'र्स्स्रुर'ग्रुखा ५वयःक्ष्मामी स्रवः कार्यः वेदःसुरः॥ मासुरः र्ह्वः वेषः विश्वः स्त्रुम् वेदः स्त्रुः स्वायः स्वा <u>२.तर्बैर्यत्वर्बेर.तपुःध्यात्राच्यात्री। क्ष्याःक्षेषःक्ष्यात्वर्वेषःभःत्ररःस्या</u> १९४१मेश्रामदे मृत्राप्त प्राप्त प्राप्त मिश्रा प्राप्त मिश्राप्त प्राप्त प्र प्राप्त प्राप्त प्राप्त प्राप्त प्राप्त प्राप्त प्र प्राप्त प्र प्राप्त प्र प्राप्त प्र प्राप्त प ें द्विप्तत्त्वुषा'यदे'रमा'र्नदर**'क्र्यामुल'मुक्षा** स्वाक्ष्यामिक्षामिक्षामिक्षामिक्षामिक्षामिक्षामिक्षामिक्षामिक बूर्पथा खूब्र त्य्वुं मार्यते क्वियायय त्ये । श्वियशत्य र खूब्य रे अध्य र क्विया हे मार्थ क्विया है स्थे स्थे स र्वेट्यन्त्रेयःपरः च्चेंद्रःपर्वः भेःद्वरः वीया। द्रुः तब्वाः प्युतः वेदः तसेवः वाहरः घवयः व्या। व्यवयः देवाः य . वेशःरेगःगे:श्वेर:द्वुशःगहेर:श्वे:तवुरशा हेत:र्श्वेतःग्वःशरःरवशःगवि:वर्द्धगशःग्वरःधी। <u>२भे अ ने अद २ ५८ क तर स देशा केंद्र में गायर प्रभूष पत्र देश देश में में स्वरंद्र प्रमूष अप अप अप अप अप अप अप</u> म्बिर्याणायात्रम् । यहात्रम् विष्याम् विष्याम् विष्याम् विष्याम् विष्याम् विष्याम् विष्याम् विष्याम् विष्याम् ५'नश्चेगद'नश्चेग'यते'हेद'तबेल'सस्या र्वट'र्छस'ग्री'कुल'र्यते'सुगस'रेग'लस्या र्देर्नु'तर्'वर्तेश्चेन'ग्र्'कुट'न'ङेगा म्बर्भायम् । म्बर्भायम् । मुक्तायम् । मुक्तायम् ।

र्वनः मुंगः मीया य्ययः हुन्यं स्वत्या। क्ष्ययः यद्वा मात्रे स्वतः मात्रे स्वतः मात्रे स्वतः मात्रे स्वतः मात्र वस्वते स्वतः मात्रे स्वतः मात्रे स्वतः मात्रे स्वतः स्वतः स्वतः स्वतः स्वतः स्वतः मात्रे स्वतः मात्रे स्वतः म स्वतः मात्रे स्वतः मात्रे स्वतः स्वत

ब्रन्था क्षेत्र न्या क्षेत्र न्या क्षेत्र न्या क्षेत्र न्या क्षेत्र क्षेत्

धुः अर्घर प्यतः र्श्वेच ग्वा अर्दे अः श्वा वा अरहे। या प्रश्ने प्या वा प्या प्रश्ने प्या वा प्या प्रश्ने प्या वा प्या प्रश्ने प्या वा प्रश्ने प्रश्ने

 $\tilde{\eta}_{0} = \tilde{\eta}_{0} + \tilde{\eta}_{0}$ 

त्रचे से इस कुया दें हो कुया पेंट्स पाय द्वा केंद्र

# र्श्वेच मृते पर्शेष्ट्र र्रें बा

र्वेर:मु:५वर:धुग (र्श्वेय:५र्थेब्रा) सु:श्चेर:श्वेय:म्व:कुर:वा

### इप्र.श्र्र्यनःस्याः इप्र.चश्चनःच

द्वान्ततुःक्ट्वान्त्रान्त्रम् स्वान्त्रम् स्वान्यस्यम्यम् स्वान्त्रम् स्वान्त्रम् स्वान्त्रम् स्वान्त्रम् स्वान्त

# ग्रम्भः न्यनः ह्या क्ष्यः न्यंत्र स्वार्केष्यः घरः त्रचेतः स्वार्भेयः म्यार्थः

# त्रञ्जूग'गी'न्धत'र्घे।

३ श्रु'षेशःभ्रुंगशःश्रुंटःशेट्रप्यरःश्रुंटःहेशःख्वा। शःश्रुंटःवहेगशःशेट्रगोःश्र्यःवशःशःवद्यावदः॥ इत्रावःभ्रुंशःभ्रुंगशःश्रुंटःशेट्रप्यरःश्रुंटःहेशःख्वा। वश्रुंटःवहेगशःशेट्रगोःश्र्यःववशःशःवदुर्ग।

चट्-क्र्च-श्रेश्रश्न-द्रभ्देनश्-इणःमुश्राचनशःस्या अर्थःमुशःश्लुवःस्युदःचित्रेःस्यशःभूनशःसद्दःग्येश्या। चट-क्रुच-श्रेशशःन्द्रेत् श्लूनशःस्यःम्याःस्या। अर्थःमुशःश्लुवःस्यःस्यःस्यःस्यःस्यःस्यःस्यःस्यःस्यः। भुः पर्स्य : च्रथः र्वे रः द्वरः घरः द्वरः च्यायः स्त्री। वे रः भ्रः ह्वः भ्रः प्येयः भ्रुपयः सह दः वर्षिय। च्य

चिष्णतम् मुं कुं मुं ते न्या क्षे मुं कुं न मुं न मुं न मुं न मुं कुं न मुं न म

गामः द्वरः इंग र्स्नेयः द्वरः व्यास्त्र व्यास्

### त्वुगायते रतः सुग्रम् । त्युग्रम् । त्युग्रम् । त्युग्रम् ।

# **न्ध्रमञ्ज्ञान्**

ट्रे.चर्चेश्रात्ताना वि.हें, हैंटे.जशास्थानप्रज्ञान्त्र ज्ञान्त्र ज्ञान्य ज्ञान्त्र ज्ञान्य ज्ञान्त्र ज्ञान्त्र ज्ञान्त्य ज्ञान्त्र ज्ञान्त्र ज्ञान्त्र ज्ञान्त्र ज्ञान्त्र ज्ञान्त्र ज्ञान्त्र ज्ञान्त्र ज्ञान्त्र ज्ञान्य ज्ञान्त्र ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्र ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्र ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्त्य ज्ञान्य

मैंच्यात्रित्त्वात्त्र्ये वित्तात्त्र क्षेत्र वित्तात्त्र क्षेत्र वित्तात्त्र क्षेत्र वित्तात्त्र क्षेत्र वित्य क्षेत्र वित्य क्षेत्र वित्र वित्र वित्र वित्र वित्र वित्र वित्र वित्र वित्र क्षेत्र वित्र व

દે.સ.૧૨૨ તર્લીયા.જી.૧૫૩.૧૫૩ સ્ત્રાંત્રી સીત્રાંત્ર સાથા.જી. સીત્રાંત્ર સાથા.જી. સા

### र्थेरम:५८:क्ॅ्रें:रशःग्री:त्वुट:तुरश्

श्रीर.च.कुपश्चे, ग्रीज्ञ्जात्मरः (त्यू, चर्श्चाया श्री मा विकास क्षेत्र क्षेत

### क्ट्रें रश्र दराच बरा घरश

म्त्रित्यार्ट्ट हेथ.मैकार्ट्य्यापमार्क्ट्र स्रीत्यर्थे प्रति विष्टा हें राज्य ह्या विष्टा मित्रा हे त्या है त्

पड़िया.णस्रात्मायका.पटका.क्रें.पचय.रेग्र्यि सपु.फ्रें.रस्य.क्री.श्रघवयका.रेट.क्रियोका जयोता.योल्यव्या.यंग्रेर.प्यांजा.छे. पचय.पपु.श्रेपका ग्र्यां,प्राप्त प्राप्त प्राप्त प्राप्त प्राप्त प्रिया.यंग्रे प्राप्त प्राप

त्रियः स्टान्स्य प्राचना प्राण्य का मानि स्ट्री स्

इत्यर, प्रिंग्यक्षे विषय प्रक्षित्र प्रविश्व प्रव

### र्थेन्यन्दर्भेन्याव्दर्भुः प्रवादित्ति ।

मी, ट्र्य, जी, खुष्य, त्रम्यां विष्य, त्रम्यां विष्य, त्रम्य, विष्य, त्रम्य, विष्य, व

श्चरः (वे.ये.क्षरी
श्वरः (वे.यं.क्षरी
श्वरः (वे.यं.क्षरी
श्वरः (वे.यं.क्षरी
श्वरः (वे.यं.क्षरी
श्वरः (वे.यं.क्षरी
श्वरः (वे.यं.क्षराव्यः विष्णः व्यव्यः व्यवः विष्णः व्यवः व्यवः विष्णः विषणः विष्णः विष्णः

### পর্ট্থর্ম.নর্দ্ধী

तक्ति, शुष्ट, बुर, चतु, कूर, चार बैटिश, श्रम, बुर, स्वाप, स्वापु, स्वाप, क्ष्री, स्वाप, विक्रम, श्रम, विक्रम, श्रम, विक्रम, व

अव-दिन् देशक्र्य-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित्-प्रित-प्र-प्रित-प्र-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्र-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्र-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्र-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्रित-प्र

 $\hat{\beta}_{C,\hat{L}} = \hat{\lambda}_{C,\hat{L}} + \hat{\lambda}_{C,\hat{$ 









गाक्षःकें न्यनःहैं। नृषुःविद्यक्रें र्रातं गातुनःसूत्राक्षःसूर्याः सूर्याः स्वर्ताः

# ्राक्षःमुदःचन्नदःर्करः। रे

पञ्चतः र्कटः सुद्धः सुद्धः र्क्षेत्रः या देवा। द्वा वा की प्रितः या की या की प्रितः या विष्णः या की या विष्णः या की या

पार्श्वभारा-श्रवर-भूर-पार्वभार्भ-श्राप्त्री।

पार्श्वभारा-श्र्वित-व्युः प्रश्रव्याश्राप्त्री प्राप्ति प्रश्रित-व्युः प्रश्रवाश्राप्त्री प्राप्ति प्रश्रित-व्युः प्रश्यित-व्युः प्रश्रित-व्युः प्रश्रित-व्युः प्रश्रित-व्युः प्रश्रित-व्युः प्रश्रित-व्युः प्रश्रित-व्युः प्रश्यित-व्युः प्रश्यित-व्युः प्रश्यित-व्युः प्रत्यः प्रत्य-व्युः प्रत्य-व्युः प्रत्य-व्युः प्रत्य-व्युः प्रत्य-वित्य-व्युः प्रत्य-व्युः प्रत्य-व्युः प्रत्य-वित्य-व्युः प्रत्य-व्यः प्रत्य-व्यः प्रत्य-व्यः प्रत्य-व्यः प्रत्य-व्यः प्रत्य-व्यः प्रत्य-व्

चत्रियः र्श्वेचः द्वंत्रः स्वायसः यः त्रह्यसः हेः प्यंत्रा द्वायः र्श्वेचः द्वंत्रः र्श्वेचः स्वायः प्यंत्रः स्वायः स्वायः स्वायः र्श्वेचः स्वायः स्वयः प्यंत्रः स्वयः स्वयः स्वयं। स्वायः र्श्वेचः स्वयः स्वयः स्वयः स्वयः स्वयः। स्वयः स्वयः स्वयः स्वयः स्वयः स्वयः स्वयः स्वयः। स्वयः स्ययः स्वयः स्वयः

पकुष्यपञ्जीयः सुवार्थे अद्युद्धः सुद्धः सुद

चञ्चः मानुः सञ्जीनः सुमाः सुन् । तुः स्वी । सुन् । तुः स्वी । तुः स्वी । सुन् । तुः स्वी । सुन् । तुः स्वी । सुन् । तुः स्वी । तुः

वर्डे ख़्रम्ग्यु सेसस्यायर इत्रवरे पेर्या

चर्ड्,र्मी,चचर,चरुर,पम्,चम्बर,भंथ,भूष्,भाष्य्ना।
चर्ड्,चम्चेर,चचर,पद्यर,भर्म,ज्यर,चम्,प्र्यार्थ,पवर्र,प्र्याः।
चर्ड्,चम्चेर,चचर,पद्यर,भर्म,ज्यार्थ,पवर्र,प्र्याः।
चर्ड्,च्मेर,चचर,पद्यर,भर्म,ज्यार्थ,पवर्र,प्र्याः।
चर्ड्,च्मेर,चचर,पद्यर,चम्,ज्यार्थ,प्राप्यार्थ।।

५'यन् द्र'र्खे ५'ग्रीश'र्मिय'म्'र्थे' स्तुशह्या में द'ष्य'स्'द्र-'स्'य द्वि ५'र्येम'र्सेमा नेश'र्क ५'स्व्रस'से सें न'म्ब्रश'न वें 'ग्रीत' में मा नश्राम्य ने सें द्रित्स'ग्री'से 'द्रस्य स्थानें 'ग्रीत' स्वाप

तस्रितायमासु सर्वे चवतार्वनाग्रास्तुना र्वेषम्यान्त्राम्

#### Colposcopy at Samdrup Jongkhar

Due to Covid-19 and its prevention protocols in place, there have been restrictions of movement from the high-risk to low-risk Dzongkhags. All the eleven Gewogs under Samdrup Jongkhar Dzongkhag fall under high-risk area. Due to this, many women could not go to the higher level of health facilities to avail continuity of healthcare services, especially with gynaecological problems. Over hundreds of women were detected with abnormal pap smear results that require colposcopy procedures by the gynaecologist. Such facility is only available in Trashigang and Mongar for the eastern regions.

Thus, with a special request to the Ministry of Health by the Dzongkhag, the gynaecology team of seven members conducted a-ten-day Colposcopy camp at Samdrup Jongkhar Hospital from 4<sup>th</sup> to 13<sup>th</sup> September, 2021.

| Diagnosis  | No. of Cases | Procedures       | No. of Cases |
|------------|--------------|------------------|--------------|
| LSIL       | 45           | Colposcopy       | 110          |
| HSIL       | 08           | Cervical Biopsy  | 28           |
| ASC-H/AGUS | 21           | Cold Coagulation | 63           |
| ASCUS      | 26           | LEEP             | 14           |
| Others     | 141          | Others/OPD       | 115          |

Over 200 women with gynaecological problems benefited from this camp without having to undergo a mandatory seven-days-quarantine and travel to other Dzongkhag hospitals. The Ministry of Health, Royal Government of Bhutan, under the Health Flagship Program, funded this camp.

Pema Tshewang, DHO

#### First Professional Hairdresser at Tsangchuthama — The PSL Beneficiary

Egyptians were the first barbering service providers in the world around 5000 B.C. While in 2021, Mohan Gurung, who is 22, is making the same record through the government facilitated scheme known as Priority Sector Lending Scheme (PSL) at the satellite town, Phuntshothang.

"PSL is a scheme to promote and identify the cottage and small industries as a priority sector for targeted lending and increased coordination and efficacy in the delivery of government support scheme and incentives. PSL is lending based on insurance on the purposed project assets." (Bank of Bhutan).



Mohan Gurung is from Pemathang. He completed a certificate course in hairdressing from Tamang Hairstyle Salon (Unisex). Like the highly respected priest and men who practiced barber in Egypt, Mohan is also specialized in straight razor shaving, coloring, and haircutting.

Hereafter, the gentlemen of Martshala, Samrang, Pemathang, and Phuntsothang may not have to travel 42 miles from the satellite town to the main town in Samdrup Jongkhar to look like James Bond. Even women may love to visit his hairdressing

salon for hair dyeing to look desirable and fashionable like Angelina Jolie.

Mohan has rented a room in the yellow building, second floor. It is in the last row if the entry is made from the bridge, and first if coming from Phuntshothang Middle Secondary School. His hairdressing salon has special barber chairs, modern equipment for rinsing and washing hair, and organized cosmetics. He has also created employment opportunities. In a day, he and his employee cut twenty men's scalp hair at Ngultrum eighty per head. Hence, this is an example of PSL success story.

Sonam Wangchuk, Asst. Economic Development Officer

#### What IGNITED Gawa?

Gaby, an American tourist, was at the Gaki Resort. He said it was a wonderful place to stay, not because of the fancy furnishings. But because of the people who worked there. When the employees of the resort walk you and say "hello" to you, you feel that they wanted to say "hello" to you. Not that it is a service protocol.

Gabi said that in the lobby there was a coffee stand. One afternoon, he went to buy a cup of coffee and met a barista named Gawa, who was helping him. A barista is a person who prepares and serves espresso-based coffee drinks. He said that Gawa was a charming, funny, and engaging man. He loved talking to him.

"Do you like your job?" Gabi asked.

"I love my job". Gawa replied.

"You love your job! What it is about the Gaki Resort that made you say this?" Gabi followed up.

"Throughout the day, managers will walk past me and ask me how I am doing. Is there is anything I need to do my job better." Gawa said.

Gawa added that at the other resorts the managers are trying to make sure we're doing everything right. They catch us when we do things wrong. When I worked there, I like to keep my head under the radar and get through the day so that I can get my paycheck.

He said that at the Gaki Resort, "I can be myself."

Message

What is the reason why Gawa has two different experiences? At the Gaki Resort, Gawa feels the care by leadership while at the other Resort, he doesn't. When people feel cared for, they go above and beyond. When people don't feel care, they do enough to stay out of the trouble and collect a paycheck.

We can make a difference only through heart-based leadership or Cares to Lead Leadership. Your people's desire to go beyond ripples out to clients, to your bottom line.

I am sharing this story to refresh and reflect upon ourselves. We should reflect on the impact we have on our subordinates. As well, the clients in any organization/workplace. I feel that a leader should 'IGNITE'

I= INSPIRE

G= GUIDE

N= NURTURE

I= INVEST

T= TRUST

**E= ENCOURAGE AND EMPATHIZE** 

The Real Job of the leader is not being "in-charge" but it is about taking care of the people "in our charge".
- Simon Sinek

Credit: Simon Sinek and his story about Noah. Simon is an author and an inspirational speaker.

Yeshey Wangchuk, Legal Officer

#### Mass COVID-19 Vaccination Programme in Samdrup Jongkhar

As per the National COVID-19 vaccination rollout plans and funding support from the Ministry of Health, the first round of mass vaccination (AstraZeneca) for the general population aged 18 years and above was carried out from March 27 to April 2, 2021. However, it was extended for another week as a catch-up campaign for those who couldn't make it to the scheduled vaccination dates. Home visits were also done by the respective health centers to provide vaccination at their homes for people with special needs to ensure that every eligible people are vaccinated (eg. Bedridden, disabled, retreat center, etc..). The second round of COVID-19 vaccination (Moderna) was carried out from July 20 - 26, 2021.

Fig. 1. Covid-19 vaccination rollout >18 years, 2021

| Date of campaign                | Total eligible population | Total vaccinated | Coverage<br>(%) |
|---------------------------------|---------------------------|------------------|-----------------|
| 27 March - 2nd April (1st dose) | 23954                     | 22946            | 95.79           |
| 20th- 26th July (2nd dose)      | 24809                     | 24399            | 98.35           |

#### Covid-19 vaccination rollout (Moderna) 12-17year, 2021

| Date of campaign                 | Total registered | Total vaccinated | Coverage % |
|----------------------------------|------------------|------------------|------------|
| 29th July -2nd August. (1st dose | 3854             | 3832             | 99.42      |
| 28th Oct1st Nov.(2nd dose)       | 3691             | 3776             | 100        |

The first round COVID-19 vaccination (Moderna) for the children aged 12-17 years was carried out from July 29 to August 2, 2021. The second round vaccination was carried out from October 28 to November 1, 2021 (Vaccination details in Figure - 1).

During the vaccination rollout programme in Samdrup Jongkhar Throm, the members of the business community and civil servants of Samdryp Jongkhar Throm supported the programme with mineral water to all those who attended the vaccination at Tendrelthang, Dewathang hospital & Samdrup Jongkhar hospital. A few also came with voluntary cash contributions to provide refreshments to the vaccination teams (Contribution details in Fig. 2).

| Fig. 2 Contributions received during the Covid-19 Vaccination roll out for the public of S/Jongkhar & Dewathang Thromdey (2021) |   |       |            |             |  |  |
|---|---|-------|------------|-------------|--|--|
| SI.No   | No Name/Organization:   | Cash  | Mineral wa | ter (Cases) |  |  |
| SI.NO   |   | Nu.   | 1st Round  | 2nd Round   |  |  |
| 1   | M/S Tshering Steel Works  | 2500  |            | 15          |  |  |
| 2   | BIFA  | 2500  |            | 15          |  |  |
| 3   | Karma Choeda, RD, Labour Office                                     | 3000  |            |             |  |  |
| 4   | Barma Chemicals Pvt. Ltd. S/Jongkhar                                | 12500 |            |             |  |  |
| 5   | SMCL  |       | 100        |             |  |  |
| 6   | Namgyel Tshongkhag  |       | 100        | 100         |  |  |
| 7   | Kezang Tshongkhang  |       | 100        | 100         |  |  |
| 8   | Kezang Wangchuk, Kuensel Reporter, S/Jongkhar                       |       | 5          |             |  |  |
| 9   | Sonam Yangphel Enterprise, S/Jongkhar                               |       | 5          |             |  |  |
| 10  | Hotel Park, S/Jongkhar  |       | 20         |             |  |  |
| 11  | Hotel New Looks   |       | 25         |             |  |  |
| 12  | Kinley Wangchuk (BBS reporter)                                      |       | 5          | 1           |  |  |
| 13  | KD Hotel, S/Jongkhar  |       |            | 15          |  |  |
| 14  | Dasho drangpon, S/Jongkhar  |       |            | 10          |  |  |
| 15  | Karma Tshongkhag S/Jongkhar   |       |            | 20          |  |  |
| 16  | Ganger construction,S/Jongkhar                                      |       |            | 10          |  |  |
| 17  | Business community, Dewathang Throm (Managed by Dewathang hospital) |       | 16225      | 76          |  |  |
|   | Total   | 20500 | 16585      | 361         |  |  |

Pema Tshewang, DHO

#### **MY KING**

My King, you are the greatest person in the world,

You teach us everything that is good for us,

You love us like our own parents,

And you care like your own children.

My King, you give us light

when we are in the dark,

You make us shine bright like the sun

And your words of wisdom are in the hearts.

Your words give us the reason to smile

And it shows the gate to happiness,

I praise you with all my heart

As you bless me with your love.

I wish you to have a long and peaceful life,

I pray for your wellbeing for all times to come

With thousands of sincere acknowledgments

For Your Majesty, which is safely locked in my heart.

Sonam Tshomo, XI Arts, Gomdar Central School

# Peer Teaching: Impact on Students' Academic Achievement and Learning Motivation towards Mathematics

#### **Abstract**

This action research examined the impact of peer teaching on academic achievement and learning motivation towards Mathematics of grade 12 students in Karmaling Higher Secondary School. The sample of this study was composed of 39 students taking Business Mathematics in the year 2021. Data was collected using Mathematics Achievement Test (MAT) and the student questionnaires which were prepared by the researchers. To analyze the data, Statistical Package for Social Sciences (SPSS) version 26.0 and Statistical t-test were used. The result of this study revealed that peer teaching strategy is an effective tool for increasing Mathematical achievement and motivating students to learn Mathematics. The findings also showed a strong positive correlation between the students' learning motivation and their Mathematics achievement. Therefore, this study recommends that teachers adopt a peer teaching strategy in the classroom so as to improve students' performance in Mathematics.

Keywords: Academic achievement, motivation, peer teaching.

#### Introduction

The twenty-first century has produced unprecedented advances in many aspects of human life. As the world emphasizes technological and industrial growth, importance is given to science and related subjects. In Bhutan, despite remarkable progress and development in Mathematics education, over the years Mathematics has been one of the poorly performed subjects in Bhutanese schools. His Majesty The 5th King of Bhutan, at the 3rd convocation of the Royal University of Bhutan for Samtse and Paro Colleges of Education stated "In Bhutan, Mathematics is one of our main weaknesses – most students do not like Math and the majority scores less than 50%" (Royal Education Council, 2012, p. v).

Mathematics teachers today struggle to provide effective and efficient instructional strategies that would help students achieve academic success and student growth. Moreover, in Bhutanese schools, the teaching and learning approaches are still teacher-centric (Maxwell, 2008). Similarly, the existence of a comfort zone is minimal between the teacher and students in Bhutanese schools (Utha & Rinzin, 2019). This hinders students to approach teachers fearing to speak their minds. Hence, this action research (AR) is conducted to determine if peer teaching could be adopted as an alternative teaching and learning strategy in Mathematics classrooms.

#### Reconnaissance

#### Situational analysis

Karmaling Higher Secondary School is in Samdrup Jongkhar Dzongkhag formally established in 2013. There are 403 students (198 males and 205 females) studying from classes IX-XII. Students from diverse socio-economic backgrounds throughout Samdrup Jongkhar and three feeder schools come to study in Karmaling HSS after completing classes VIII and X. The school has 29 teachers (18 males and 11 females).

The analysis of the annual school result report shows that class XII students' overall performance in Mathematics is low. There is a considerable number of students who underperformed in Mathematics. Despite the numerous efforts that were made to improve the performance in Mathematics, it continued to be below expectations, thus, the school is witnessing a declining trend in the quality of Mathematics education. In addition, improving the learning motivation of students has been a challenge in teaching and learning Mathematics. Therefore, this AR is intended to improve academic achievement and increase the learning motivation towards Mathematics.

#### Competence

The lead researcher has a master's degree in education (Mathematics) from Samtse College of Education. One of the research collaborators holds the Post Graduate Diploma in Education (Mathematics) from Samtse College of Education, while the other has a Bachelor in Education (Math/Physics) from the same institute. All the teacher-researchers studied Educational Research Module in the college as one of the required modules. The keen interest of the researchers and ability to study in the field of research encouraged them to carry out this action research. They had been teaching Mathematics in High School for the previous five to seven years. The critical friend has a Post Graduate Diploma in Education (Physics) from Samtse College of Education. She attended a research module during her training and is fluent in action research methods.

#### **Literature Review**

Scruggs and Marshak (2012) defined peer teaching as a teaching technique in which students are paired up to study or practice an academic task. It is an interactive approach where one of them takes the role of the teacher (tutor) and the other takes the role of the learner (tutee) under the guidance of the teacher. The students in the pairs may have the same or different abilities or ages.

According to Miller et al.(2010), the advantages of peer teaching for the tutee include successful learning, individual focus, the freedom to respond to his/her partner rather than the teacher, and friendship with peers. Peer teaching also provides the students an opportunity to enhance their social and behavioral abilities, including communicating, sharing, and cooperating with each other in the classroom. Similarly, the research base study also suggests that socialization interactions that occur during peer teaching will support both the tuter and the tutee by encouraging students to learn and improving their social status among peers (Fuchs, et al, 2002; Rohrbeck et al, 2003).

Extensive research has proven peer teaching as an effective teaching strategy to engage students and enhance their academic performance (Topping, 2005; Johnson, et al., 2015; Morrison, 2004; Oloo, et al., 2016). A study conducted by Perrot et al. (2013) on the effect of peer teaching in Grades 1-12 revealed that peer teaching is an effective intervention regardless of grade level or disability status. Additionally, Okilwa and Shelby (2010) examined the effects of peer teaching on the academic performance of students across subject areas such as language, arts, Mathematics, Science, and Social Studies. Their findings demonstrated the positive effects of peer teaching across all the subjects.

Peer teaching is a common trend in teaching and learning Mathematics. Vassay (2010) conducted a study to examine the effect of peer teaching on the student's performance in Mathematics. The study used a pretest-posttest Control-Experimental group design. The result indicated that the experimental group was significantly better in their performance. Nawas and Rehman (2017) worked on students' success in Mathematics at the secondary level using peer tutoring. The study revealed that peer tutoring strategy increased academic achievement in students and benefited students who were weak and mediocre.

Peer teaching is commonly used in remedial courses as a teaching strategy for students who cannot learn at an average rate in a normal classroom (Abu Armana, 2011). The remedial teaching supports the students master their content-oriented materials, improving study skills, and strengthening their confidence in their learning strategies (Luo, 2009). The increasing number of studies have shown that students receiving remedial teaching not only improved academic performance but also increased learning motivation, confidence and interest (Luo, 2009; Abu Armana, 2011; Yang et al, 2014). Therefore, peer teaching can be enhanced through remedial classes for students who have performed poorly in academic and ensure their future academic success.

#### **Action research question**

Does peer teaching have an impact on students' Mathematics achievement and motivation?

#### Methodology

#### **Design**

This AR study employed one group pretest-posttest quasi-experimental design to examine the impact of peer teaching on academic achievement and learning motivation towards Mathematics of grade 12 commerce students.

#### **Participants**

The participants for this study were all Grade 12 commerce students (n=39) taking business Mathematic.

Table 1. Distribution of Participants

| Gender | Frequency | Percentage |
|--------|-----------|------------|
| Male   | 20        | 51.3       |
| Female | 19        | 48.7       |
| Total  | 39        | 100        |

#### **Instruments**

The study aimed to examine the impact of peer teaching on students' academic achievement and their learning motivation towards Mathematics. The data for the students' academic achievement was collected through the Mathematics achievement test (MAT). The researchers developed the MAT questions consisting of fine content validity and generally met the requirement of the teaching objectives.

Further, survey questionnaires were administered to understand the impact of peer teaching on students' learning motivation towards Mathematics. The questionnaire consists of 10 five-point Likert items; Strongly Disagree (SD), Disagree(D), Neutral(N), Agree(A), and Strongly Agree (SA) [Appendix A]. These responses were assigned values ranging from 1 to 5 respectively.

#### **Procedure and Interventions**

In the first round of teaching, the researcher used traditional teaching methods. That is, one-way instructional methods were used to teach the content where students could not interact with each other at any time in the classroom. Then the pre-test was conducted on all the students. On the basis of the pre-test, the peer teaching was applied in the following approaches:

One-to-one tutoring- one high achiever (tutor) and one low achiever (tutee) was paired to carry out the experiment. During the experiment, a peer teaching strategy was used for fifty minutes in regular classes. The researcher/teacher explained the concept for the first 15 minutes. Then researcher/teacher assigned the task from the exercise related to the concepts taught. The tutors helped the tutees to solve the questions and correct the mistakes made by the tutees. This process was continued for 30 minutes. The last 5 minutes were used by the teacher to conclude the session.

Class-wide peer teaching — all of the students in the classroom were involved actively in the teaching/learning process in a small group. Students were able to work with one another to learn specific materials. This could give all students a sense of being actively involved in the process and increase peer support and opportunities for achievement, as well as positive social interactions among students.

Reciprocal teaching- it is a strategy that will ask tutees to share the role of tutor to lead the discussion about the given task. During the session of treatment, the tutees and tutors exchanged their roles and did the same work.

The experiment was carried out for six weeks and after the treatment program, the researchers conducted the post-test for post-data collection. In addition, the survey questionnaire on student's learning motivation was administered twice (pre-survey and post-survey)

#### Data analysis

The data collected were analyzed in the form of descriptive statistics and inferential statistics using Statistical Packages for the Social Sciences (SPSS 26.0). The comparison between pre-test and post-test scores of the students was done by performing paired sample t-test with the level of significance, mean and standard deviation were used. Moreover, Pearson's correlation is calculated to find the relationship between students' learning motivation and MAT.

#### **Ethical consideration**

Ethical clearance to conduct this study was obtained from the Principal in Karmaling Higher Secondary School (APPENDIX B). The student participants were briefed on the purpose of the study by the researchers. The participating students were assured of the anonymity and the extent of confidentiality of the study results.

#### Result

#### **Comparison on Mathematics Achievement Test (MAT)**

Table 2 shows the students' test mean scores of pre-test and post-test. The test score of the pre-test (M=9.26, SD=3.45) and post-test (M=13.78, SD=3.71), with an increased mean score of 4.52, indicates that students' academic achievement in Mathematics has improved. Thus, the higher mean score of the students in the post-test was attributed to the use of peer teaching strategy.

Table 2. Comparison on MAT score

| Test     | N               | Mean (M) | SD   |
|----------|-----------------|----------|------|
| Pos-Test | 39              | 13.78    | 3.71 |
| Pre-Test | 39              | 9.26     | 3.45 |
|          | Mean difference | 4.52     |      |

Paired Sample T-test was conducted to find whether there is a significant difference between pre-test and post-test. Table 3 shows that there was a significant difference in the achievement between pre-test and post-test [].

Table 3. Paired Sample t-Test

#### Paired Differences

|                        |      |      |      | 95% confidence interval of the difference |       |      |    |                   |
|------------------------|------|------|------|---|-------|------|----|-------------------|
|                        | Mean | SD   | SE   | Lower                                     | Upper | t    | df | sig(2-<br>tailed) |
| Post-test-<br>pre-test | 4.51 | 4.21 | 0.67 | 3.15                                      | 5.88  | 6.69 | 38 | 0.00              |

#### Students' learning Motivation towards Mathematics

Table 4 presents the mean scores of the students' learning motivation towards Mathematics in pre-survey and post-survey questionnaires. The overall mean score for learning motivation towards Mathematics increased from 2.77 (pre-survey) to 3.43 (post-survey), indicating that students' learning motivation towards Mathematics to be at a high level.

Table 4. Score on Learning Motivation in pre-survey and post-survey

|             | N  | Mean(M) | SD   | Level of Learning<br>motivation |
|-------------|----|---------|------|---------------------------------|
| Pre-survey  | 39 | 2.77    | 0.99 | Medium                          |
| Post-survey | 39 | 3.43    | 1.09 | High                            |

Level of learning motivation: Very low: 1.00-1.80, Low: 1.81-2.61,

Medium: 2.62-3.42, High: 3.43-4.23, Very High: 4.24-5.0

\*\*

# Relationship Between Students' Learning Motivation and MAT

Pearson's correlation was calculated to examine the relationship between students' learning motivation and MAT as presented in Table 5.

Table 5. Correlation Between Students' Learning Motivation and MAT

|            |                         | МАТ   |
|------------|-------------------------|-------|
| Motivation | Pearson Correlation (r) | .78** |
|            | Sig. (2-tailed)         | 0.00  |
|            | N                       | 39    |

Correlation is significant at the 0.01 level (2-tailed).

Calculation of the Pearson's correlation (Pearson's r) between students' learning motivation and MAT revealed a value (r=0.78), indicating a strong correlation. Consequently, this data when charted on a scatter plot showed a positive relationship as presented in figure 1. Figure 1. Correlation between learning motivation and MAT

#### **Discussion and Conclusion**

The first goal of this study was to draw the effect of peer teaching on 12th-grade students' academic achievement in Mathematics. The post-test mean score (M= 13.78) is greater than the pre-test (M=9.26). The usage of the peer teaching techniques was credited in the post-test. Moreover, the results in table 5 showed that there is a statistical significance difference at a level in Mathematics academic achievement of the students and it is attributed to the peer teaching process. This shows that when students were taught using peer teaching strategy, they were able to obtain greater results than when they were taught using a conventional method. The above results are in agreement with the findings of Oloo (2016), who investigated the effect of peer teaching among students on their performance in Mathematics and found that students' achievement in Mathematics increased using peer teaching. Similarly, these findings agree with those of Abdelkarim & Abuiyada (2016), who examined the academic impact of peer teaching and found

that greater academic gains were made by students when engaged in peer teaching intervention.

The peer-teaching strategy was an encouraging tool in learning Mathematics. The data obtained from the students' survey questionnaire revealed that after the intervention programs, students' learning motivation towards Mathematics has improved. The motivation had a mean score (M=3.43, SD=1.09) in post-survey indicating that students' motivation level was high towards learning Mathematics. In addition, the majority of them indicated that they liked to help peers, as helping others to learn motivated their own learning. The findings also revealed that there was a significant positive correlation between students' motivation and academic scores of the students. These results can be related well to the findings of Lim (2014) who carried out a case study on peer-teaching. The result showed that students welcomed the peer-teaching strategy and hence, the learning motivation was improved. Similarly, the study conducted by Singh, et al., (2002) reported a positive significant relationship between motivation and the students' scores.

In conclusion, the overall outcome was a positive one, with increased achievement test scores and generally, our findings showed that students found peer-teaching a motivating strategy in the classroom. This result certainly leads the other teachers to extend the approach to other subjects to bring better performance and motivate the students. However, proper monitoring must be taken with the implementation and encouraging their participation.

#### Limitations

Although, the AR study has revealed that there was a positive impact on students' learning Mathematics using peer-teaching, yet it has some limitations. The results of this study are limited to only 12th-grade students in Karmaling Higher Secondary School in Samdrup Jongkhar Dzongkhag. Therefore, the generalization of the results to a larger population of this study was restricted. Moreover, the major limitation of this study was related to the limited available literature with regard to peer teaching in the Bhutanese context. Thus, the study had to largely rely on studies done in other countries.

#### Recommendation

Based on the findings, the study recommends that teachers employ peer teaching strategy in the teaching and learning process to assist students in improving their academic achievements. The study revealed that peer teaching is an effective strategy to improve the performance of the students in Mathematics. It is strongly recommended to investigate the effectiveness of this strategy in other subjects. The authors recommend that future researchers study this strategy and explore its benefits to the students.

Students should be allowed to create discussion groups in which peer teaching is encouraged, particularly at the end of each topic. Students who cannot approach teachers should be encouraged to participate actively in group discussions and ask questions in order to enhance their performance.

The practice of conducting remedial classes at present needs to be revisited. It is recommended schools encourage peer teaching in remedial classes looking at best practices followed in other countries.

#### References

Abdelkarim, R., & Abuiyada, R. (2016). The effect of peer teaching on Mathematics Academic Achievement of the undergraduate students in Oman. *International Education Studies*, 9(5), 124-132.

Abu Armana, M. R. (2011). The impact of a remedial program on English writing skills of the seventh grade low achievers at UNRWA schools in Rafah. (AM thesis, The Islamic University of Gaza).

Drukpa, P. (2015). Bhutanese student's attitude towards mathematics: Finding from a cross-sectional survey of grade six students. *Rabsel-the CERD Educational Journal*, 16(2), 37-56.

Fuchs, L., Fuchs, D., Mathes, P., & Martinez, E. (2002). Preliminary evidence on the social standing of students with learning disabilities in PALS and No-PALS classrooms. *Learning Disabilities Research*, 17(4), 205-215.

Johnson, E., Robbins, B., & Loui, M. (2015). What do students experience as peer leader of learning teams? Shool of Engineering Education.

Lim, L. L. (2014). A case study on peer-teaching. Open Journal of Social Science, 2, 35-40.

Luo, Y. W. (2009). The effect of using e-learning websites as a remedial teaching aid on english underachievers at universities of science and technology. *Journal of Engineering Technology and Education*, 6(2), 182-195.

Miller, D., Topping, K., & Thurston, A. (2010). Peer tutoring in reading: The effects of role and organization on two dimensions of self-esteem. *British Journal of Education Psycology*, 417-433.

Morrison, M. (2004). Risk and responsibility. *Improving Schools*, 7(3), 217-226.

Nawas, A., & Rehman, Z. U. (2017). Strategy of peer tutoring and students success in Mathematics: An analysis. *Journal of Research and Reflective in Education*, 11(1), 15-30.

Oloo, E. A., Mutsotso, S. N., & Masibo, E. N. (2016). Effect of peer teaching among students on their performance in mathematics. *Internation Journal of Scientific Research and Innovative Technology*, 3(12), 10-24.

Perrot, L. B., Davis, H., Vannest, K., Williams, L., Greenwood, C., & Parker, R. (2013). Academic benefits of peer tutoring: A meta-analytic review of single-case research. *School Psychology Review*, 42(1), 39-55. doi:https://doi.org/10.1080/02796015.2013.12087490

Rohrbeck, C., Ginsburg-Block, M., Fantuzzo, J., & Miller, T. (2003). Peer-assisted learning interventions with elementary school students: A meta-analysis review. *Journal of Educational Psychology*, 95(2), 240-257.

Royal Education Council. (2012). The national education framework: shaping Bhutan's future. Thimphu: Royal Education Council.

Singh, K., Granville, M., & Dika, S. (2002). Mathematics and science achievement: Effects of motivation, interest and academic engagement. *The Journal of Educational Research*, 95(6), 323-332.

Topping, K. J. (2005). Trends in peer teaching. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 25(6), 631-645.

Utha, K., & Rinzin, S. (2019). Peer-learning: An alternative teaching pedagogy for highly teacher centered classes. *International Journal of English*, *Literature and Social Science*, 4(5), 1520-1529. doi:https://dx.doi.org/10.22161/ijels.45.41

Vassay, E. (2010). The effects of peer teaching in the performance of students in Mathematics. *E-International Scientific Research Journal*, 2(2), 161-171.

Yang, D.-C., Lai, M.-L., Yao, R.-F., & Huang, Y.-C. (2014). Effects of remedial instruction on Low-SES & low-math students' mathematics competence, interest and confidence. *Journal of Education and Learning*, *3*(1), 1-15.

Budhi Man Mongar, Ugyen Lhendup, Pema Norbu, Tashi Pelmo

(Karmaling Higher Secondary School, Mathematics/Physics/IT Department)

#### Oh Lord!

Oh Lord! Give me the strength

To face the truth of the world till the end

Bragging through sorrow,

Life has been so hollow.

Days are valid clumsy,
Thought of mine merely gloomy
Me and my mission,
Sails in a meadow of lesson.

Far miles, across valleys,
Parents and friends are seen rarely
Prayers and wishes dwell around,
For us to dance round and round.

Oh Lord! Give me the strength,
With all might and length
Loaded with my illusion,
Let me soar with true intentions.

**Ugyen Tshewang, Teacher** 

#### What's There in The Name?

What's there in the name?
Why Rose is called so 'Rose'?
When it smells good.
Why not so as 'Good' then?
Oh! Not even 'Good',
For good is of look when seen,
Then why not 'Sweet' rather Rose?
"Sweet?', no not sweet!
As it isn't sweet when smelled,
For sweet is of taste in Tongue.

Can be rather called 'Pleasing',
As its smell pleases the Nose.
So can it be named 'Pleasing'?
Oh no! Not even as 'Pleasing',
For the Nose is there to smell,
Then why not call 'Nose'?
Why? Why? Why 'Rose' but not 'NOSE'?
Is there any answer to this?
Is it arbitrariness,
Of Emptiness?

Rinchen Dendup, Teacher, Orong LSS

# Imperial Factors that Influence Academic Performance in Secondary Grade Results

#### Introduction

The quality of education is the ultimate goal of a teaching and learning process in academia which is significantly influenced by imperial factors. However, it is hard to pin it down to identify a dominant cause affecting the quality of education. As a glimpse of hope for educators, several studies have proven different factors having a great impact on academic performance such as a class size (teacher-student ratio) or a number of pupils (Monks and Schmidt, 2011); Students' Socio-economic Background (Okioga, 2013).

Jasgeet and Pankaj (2021), suggest a positive correlation between a study habit and academic achievement. The other finding also indicates a School Administration and Teachers' performance has a great impact on the quality of education (Suhartono et al, 2020). Additionally, a systematic review of its association with academic achievement and student-reported outcomes reveals that teacher burnout is associated with worse academic achievement and lower quality student motivation (Madigan and Kim, 2021). However, despite verbal statements on the poor quality of education, no authentic study has ever been done in the Bhutanese education context.

Therefore, this very report aims to study the current status of mid-terminal academic results of grade IX students of Phuntshothang MSS, 2021 on a small scale. The study also examines intrinsic as well as extrinsic factors that influence pupils' academic performance in school.

# **Aims and Objectives**

- 1. To reveal the statistical status of results from secondary grade ix students.
- 2. To study imperial factors that might have an impact on academic results.

#### Method

Targeted Sample.

The current study comprised a total of 87 students (43 males and 44 females) from three sections (A, B, and C) belonging to secondary grade from the age group of 12-17 years from Phuntshothang MSS, Samdrupcholing, Samdrupjongkhar. For the statistical analysis, variables such as intrinsic factors and extrinsic factors' questionnaires were taken as a measure to compute with academic performance of the last mid-term results of the year 2021.

#### Measure

For measuring imperial factors, a grade point average (GPA) scale of 0.0 - 10.0 ( $\leq 5$ - less effort; =0.5- average effort and  $\geq 0.5$  – great effort given) was used to compare with pupil's academic mean mark results out of 50%.

The imperial factors are classified as intrinsic (self-study and mobile usage) and extrinsic (teachings and parental support) factors based on the input offered. GPA scorings were done manually through personal communication with targeted pupils to avoid any subjectivity in view of their habits that they had been practicing over the last 4 months in the school. The informed consent participants of the study were done with an assurance of confidentiality throughout the study.

# Statistical Analysis

Significant differences in academic results were computed and tested by Kruskal-Wallis followed by Dunn's posthoc test with a 'Bonferroni' method for pairwise comparison. Kendall—Theil regression with the Siegel method by default was used to test the correlation between subject results. A Scatter plot was created by using the function plot (x, y) for visual analysis for both intrinsic as well as extrinsic imperial factors. All statistical analyses were conducted in R version 3.4.1 and RStudio version 1.0.153 (RStudio, Inc.). The significant level was set to 0.05 for all statistical analyses.

#### Results

The overall mean mark score was 28.08 out of 50% in the midterm academic results. Kruskal-Wallis rank sum test reveals the scores among different subjects were significantly different (p < 0.01) (Figure 1).

The subject wise statistical test also shows the significant differences within the same section (Figure 2). The ICT results excel in all the sections followed by optional and significantly low scores in science subjects (Biology, Chemistry and Physics).

A scattered plot with (x, y) functions of extrinsic factors (Teachings and Parental Support) indicates a positive response rendering good support to the learners (Figure 3). But, the intrinsic scattered plot shows self-effort input is lower than expected output (Figure 4).

#### **Discussion**

The present statistical analysis focuses on comparing the academic results and understanding the contextual importance of how imperial factors influence the academic performance of the students. This statistical analysis has shown that even in the same school, there are different performers in terms of academic results. The overall mean mark (28.08 out of 50) indicates above average in academia. However, when com

pared statistically, low performers dominate over high performers in the school. Since, academic performance refers to the performance of the student in the school and in academics (Good, 1973) which is considered as a major predictor for evaluating the quality of education (Lawrence, 2014). Therefore, if it has to be measured for the school, the quality of education is mediocre based on the analysis.

As the nature of the subject matters (Guth, H. P., 1965), the scores among different subjects were significantly different (p < 0.01). ICT and Optional subjects were leading the results, whereby the science subjects fall behind in scores. However, there are no significant differences among Sciences, English, and Dzongkha subjects. Among the three sections, students in B are more likely to have the same performers; however, there are variations in sections A and C which indicates a vast difference between high achievers and low achievers. Educational psychologists have argued that there are many determinants of academic performance (Chamorro-Premuzic and Furnham, 2003) and in this study, the reasons for low academic performance are not due to extrinsic, but intrinsic factors. Although parental supports and teachings in the school were indicated high effort given to the learners, there are fewer pupils engaging in self-studies and spending most of the time in mobile entertainment.

The study confirmed that there is a significant difference between intrinsic and extrinsic factors which has a great impact on academic achievement. Therefore, it becomes extremely important for educators, counselors, school administrations, or any other stakeholders to identify various factors that can lead to the development of a well-defined study habit programme so that the ever concerning issue of academic performance can be addressed. Additionally, it is high time how to refrain from using mobiles by our learners not only in the schools but beyond the school premises in order for students to reach at the peak of academic performance a constant and deliberate practice through self-study engagement. Danskin & Burnett (1952) also claimed that students who were scoring higher in their academics had more effective study habits than those who lacked behind in their studies.

However, the study is being conducted on a small scale focusing on one school in a year, the findings are underrepresented at a high level and may not generalize to all the schools in the Bhutan education system. For details and authenticity, the study needs to conduct on a large scale including different schools from the country before further implications in the schooling system.

# Acknowledgment

My sincere gratitude to every single person from grade ix students of the 2021 batch without which this work won't be accomplished the way it is now. Thanks to Mr. Sherab Jamtsho and Mrs. Tshering Yangzom for proofreading the reports.

Thanks to school administrations for an opportunity to undertake these very statistical studies for the school. I also thank all the PMSS family for rendering your invaluable moral support and cooperation.

#### References

Guth, H. P., 1965. Subject-Matter Determines Method. *The English Journal*, 54(8), 681–688. <a href="https://doi.org/10.2307/810997">https://doi.org/10.2307/810997</a>

- Jasgeet and Pankaj., 2021. Study Habits and Academic Performance: A Comparative Analysis. *European Journal of Molecular & Clinical Medicine*, 7(7), 6161-6166.
- Lawrence A. S., ARUL. (2014). Relationship Between Study Habits and Academic Achievement of Higher Secondary School Students. The Indian Journal of Medical Research. IV. 143-145. 10.15373/2249555X/June2014/43.
- Madigan, D. J. and Kim, L. E., 2020. Does Teacher Burnout Affect Students? A Systematic Review of its Association with Academic Achievement and Student-Reported Outcomes. *International Journal of Educational Research*, 105 (101714).
- Monks, J., and Schmidt R. M. 2011. "The Impact of Class Size on Outcomes in Higher Education." The B.E. Journal of Economic Analysis & Policy 11, no. 1 (March 2011): Article 62. doi:10.2202/1935-1682.2803.
- Nugroho, A., Riady, O.R., Calvin, A. and Suhartono, D., 2020. Identification of Student Academic Performance using the KNN Algorithm. *Engineering, MAthematics and Computer Science (EMACS) Journal*, 2(3), pp.115-122.
- Okioga, C.K., 2013. The impact of students' socio-economic background on academic performance in Universities, a case of students in Kisii University College. *American international journal of social science*, 2(2), pp.38-46.

Tshering Dendup (Teacher), M.Sc in Biology (International), Phuntshothang MSS

# **Green Shangrila**

As I stand still and my countryside from the hill I stand,
I can say our place is a Shangrila adorned with pristine nature,
Withstanding the forced battle of modern times, weaken though.
We're here today to cherish the greens that define our place a Heaven,
But I will be anxious to imagine this place being no more to call a paradise,
When with all assorted chaos and factitious structures we may stand.
So I have a wish for our place so to remain all the time, all the same,
For nothing more can make us feel heaven but our place if remains the same.
So shall we dream to let not the modern dreams destroy our gifted Eden?

Rinchen Dendup, Teacher, Orong LSS

#### A Dream Come True Moment

Garpawoong, as the name suggests is a plain inhabited by soldiers. The school has its place in the history of Bhutan for being used by soldiers. The school established in 2008, houses 22 staff, 14 support staff and 362 students. Located in the gentle valley below the highway serves as a center of learning. Garpawoong Middle Secondary School currently headed by Principal Thinley Dorji, Vice Principal Khem P. Thapa and supported by enthusiastic staff is continuously offering valuable teachings and values that the students need in this century. It is not quite known to other Dzongkhags about its existence but now, many are not very unaware of it as staff works hard to bring the school to the limelight.

People come and go but school shall invariably remain intact with its system and mandates. Change is what we see around in our daily lives and our school aptly gets accustomed to change that comes its way. The school under the leadership of the Principal and Vice-Principal has witnessed pertinent changes over the last few years.

First, they have created a lively space for staff to work and fulfill their professional goals. Professional development programmes conducted by Vice Principal has kept every staff on their toes. Timely reminders by the leaders have boosted the contribution and timely execution of our professional obligations.

School has always dreamt of digitalizing its teaching approaches and has been in a position to provide a projector each to twelve sections a few years ago. This has started to impact child's learning for quite some time now. Having pursued consistently its digitalization process, it has successfully made a breakthrough

in classrooms with a smart television each, supported by a benign sponsor. With such a paradigm shift in the field of 21st Century Education for 21st Century Learners, we are on track and we rejoice in our success for this quick and timely transformation. Every teacher and student is awed by SMART Televisions. The benefits of teaching children through them are numerous and the amount of what children learn and prolonged retention period of children are a few amongst others.

This is truly a dream come true moment for the family of Garpawoong Middle Secondary School. We look forward to delivering our lessons in the best possible manner using everything the school has to make a difference in the lives of every child. We shall commit to delivering quality education to produce quality students. We thank everyone for making us what we are today. Garpawoong shall push harder today than yesterday to make a difference tomorrow.

# Sonam Norbu, Sr. Teacher, Garpawoong Middle Secondary School

# **My Sincere Prayer**

All over the country, there is hue and cry COVID-19 has spread over the world, Everyone is praying day in and day out Hoping the situation may become alright.

Health and wellbeing have become too expensive

Everyone remains intense and vulnerable to negativity,

Oh, God! Shower some blessings

We're all your sons and daughters,

Help us prevent the disease.

You're the culprit of our peace and harmony
The brave persons are always after you,
Locked in our own country, where you prevail
Our Kings, soldiers, and frontliners
Are there to confront fearlessly.

What do you gain from us? Hatred?

Many died, all minds are filled
with tears, pains, and sorrows

While the world weeps tears of mercy
As they reach their graveyards.

Please do understand this fact and admit,

Not to affect again.

Let peace and harmony shed all our pain,

Let economy and business thrive again.

Dawa Tshering, Offtg. Principal, Rikhey Primary School

# **My Little Ones**

Innocent eyes meander in the new air, in the new faces
Reluctantly tiptoes after mom, unable to detach her warmth
With the satchel unwilling to sit in the row with strangers
Shying away from the chocolate words of an unknown giant
Mom's sweetest persuasive words fail to convince the painful soul,
Woe, cries, and despair fill the air, the air beyond his lake.

Some overwhelmed with joy and ecstasy enjoying every scene
Walking every corner blissfully on their pace
Bursting out indigenously, unable to believe what they see around
Proudly pout for a photo with other little aliens, not forsake
Contended with what they possess, showing off their new outfit
Further, they explore breaking their cocoon, a fragile shell
They see the mighty ocean, the ocean of a Bermuda Triangle.

No matter how they began their first day, gradually they are keen Sooner or later, fast or late they bloom, they find their second home Admiring the bigger one dressing neatly and commanding the crowd Sinking in the ocean of colors, between black, white, red, and pink With the rays and glow, the clouds steadily fade away like a wink.

Different shades glitter in various shapes and swiftness

The wiser they become, the taller they grow and they see the world around

Warmly they greet with the broadest smile ever

Reminiscing their first day, I proudly smile with satisfaction

As they stand enlightened, taller, wiser than me

To serve our King, Country, and People
They are the future!
So I am proud to be a teacher.

**Chimi Dolker, Teacher, Sarjung Primary School** 

# **Unfinished Masterpiece**

I start at the page and wait

For inspiration to come

And paint it with artistic words.

But everything I try to write Comes out desperate and Disjoined, inadequate.

I have no muse to help myself Rather comes ghastly thought Into the small piece.

After pondering for a few hours My dreamy words love to dance And the stained ink on the page Becomes brighter with a fall.

> So I sit on the ground Cradling my book As if I could persuade A masterpiece from it.

Tashi Yangzom, Teacher, Jomotsangkha Middle Secondary School

# Perspectives of Phuntshothang MSS on Bhutan Baccalaureate

Bhutan Baccalaureate is one of the prestigious offshoots of the Royal decree, in which the DNA of Bhutanese inhabits. It is a revival of education through cautious learning vested in the exploration of self through the light of Guru Rimpoche's teaching. It is organic, exhibiting the local traits of what inhabits us as Buddhist and true Bhutanese. The world shall epitomize it for its unique ability in unlocking the innate capability of the student and teacher. It sheds the hope of experiential bettering learning than the conventional confined ways of exploring self with rigid ways of rubric rating and term examination. Imperatively, it is Renaissance of Teaching Culture encompassing holistic development in self which will spread its wings to the world later.

As of today, 22 schools are undergoing vigorous 39 days of baccalaureate training, scheduled on every 5th and 6th day of a week which will impact students from the coming year. Our school takes pride in being one of the Bhutan Baccalaureate schools and attending this transitioning program is another added feather to our hat. The Bhutan Baccalaureate is exactly fit to the jigsaw puzzle of education; indeed, it is one form of blessings to address the need of a fast-changing world.

The training started on Sept.10 and still, it is on. The Guiding Philosophy of Bhutan Baccalaureate took inspiration from Guru Padmasambhava which nestles five areas of development: Social, Cerebral, Emotional, Physical and Spiritual. The training is truly enriching, imparting us numerous knowledge nurturing us with enthusiasm.

As teachers are so will be the students, well molded, beautifully chiseled, outperforming the past, based on their five areas of development in three phases of learning; Gomdri Phase (has 1 learning cycle = 108 learning cycle = 108 LE//P) and Shezhin phelrim (has 3 learning cycles = 108x3 LE/P). Hence, preparing students to be accepted as constructive, contributory, creative, innovative, and responsible citizens to create a just and harmonious society. Having attended this training, we are not only trained in using various google applications but also in using padlet and many other educational-related applications.

Thank you! Bhutan Baccalaureate for exposing us to different ways to approach students online. We already feel this training will bring charismatic results as the Right tool has come to Right Mechanic.

**Phuntshothang Middle Secondary School** 

#### Feedback Mechanism in the School

What exactly is feedback? We hear the term all the time, but do we truly know what it is and why it is so important?

We defined 'feedback' as a stratagem used to describe the helpful information or criticism about prior action or behavior from an individual, communicated to another individual (or a group) who can use that information to adjust and improve current and future actions.

The school instituted the feedback mechanism as it was necessary for the progression and efficiency of the organization. The system was merely initiated by the Principal and partnered by the teachers. It could be one of the processes in capturing data, analyzing it, and using the results to drive improvements for individual teachers. We have believed that valuable feedback can help us to drive growth, improve employee engagement, and boost personal or professional productivity.

The feedback mechanism is developed through the online system using google sheets and it is been proposed with 25 profound parameters for teachers which are grounded on our school context. The teaching, non-teaching, and supporting staff are equally given the opportunity to provide feedback to every individual staff.

# The 3 major objectives of founding the feedback mechanisms are;

#### i. To enhance the Personal and Professional Growth

The Principal initiated a feedback mechanism using the data assimilated to every individual. The teachers acclaimed that the institution of the feedback system in our school is an influential mechanism as it helped them to improve their daily activities. The feedback is provided skillfully and productively. Thus, it has increased self-awareness and encouraged personal and professional development.

# ii. To heighten Student's Behavior and Academic Efficacy

The teachers are assessed with their inadequacies and upshots of the students' conduct and academic performances. We believe Positive changes to the behavior of students can improve the academic outcomes at any grade level or students with poor classroom behavior often struggle with academic skills. Thus, the

feedback system backed us to reflect on positive student and teacher relationships, teaching, and teaching strategies. So, we could make amendments for better depictions and progress. Through feedback, teachers were stimulated to struggle to grace the conduct of the students and their education to enhance a student's self-efficacy, provide an avenue for motivation, and use feedback to help direct our instructional practice.

# iii. Building Professional Relationships

Through this effective feedback, teachers are determined that the professional work relationship is built on trust, respect for one another, being inclusive in considering different opinions, being open and honest in our thoughts and actions to avoid wasting the time or energy "watching the backs."

We believed that building and maintaining good working relationships will make us more engaged with our work, improve our career potential, and elevate the whole team. It is essential to discern what we need from others and what others need from us. Understanding these needs can be instrumental in building better professional relationships.

Effective feedback, both positive and negative, is very helpful since we can consistently search for ways to make important decisions. We believed giving feedback is an important skill for teachers and students as it has a major influence on the quality of the teachers' and students' learning process that can address a wide spectrum - the cognitive, behavioral, and motivational aspects of reflections. Feedback, however, is not "the answer"; rather, it is but one powerful answer.

**Khoyar Primary School** 

#### **Post-Pandemic Education**

COVID-19 has become a term that is heard even by the deaf and dreaded even by warriors. It's on the lips of everyone, from a toddler to a most isolated hermit in the mountains. Its impact was felt throughout the entire universe and has led to a dramatic loss of human life worldwide presents an unprecedented challenge to public health, food systems, and the world of work. The emergence of COVID-19 has jeopardized education which is undeniably crucial in contributing to a nation's welfare and an individual's growth. The emergence of COVID-19 has jeopardized education which is undeniably crucial in contributing to a nation's welfare and an individual's growth. The abrupt closure of schools in the country has left everyone clueless. Those born to the farmers in a remote place are challenged students who cannot cope with their learning through technology. However, under the guidance of a selfless and dedicated leader, our country is in safe hands. Consequently, beginning this year, with much relief and excitement, our students walked

in the school.

The current crisis is a reminder of how crucial education is in society and to individuals. We are still on thin ice and regaining normalcy seems a destination yet to be reached. There is once again a joy and warmth between the teachers and students which truly is an eternal bond that we share. While in the school, we strictly monitor their temperature and cleanliness of face masks and make them wash hands with soap from various washing stations to ensure everyone is safe from the virus. In response to the much damage caused to our learners, distinct approaches had to be practiced this year to bring them back to the mainstream.

# 1. Bridging Lesson

Bridging allows learners to relate what they have learned to what they will be learning. Students were not ready to be in their next grade for they didn't have the right knowledge and skills required which is why the very first month of the year was fully devoted to providing 'bridging lessons' to develop readiness for their next grade learning. Teachers prepared their own plans and assessment modalities to cater to their learning needs.

# 2. Reading Period

Reading is undoubtedly the best way to enhance one's learning and, on this view, we have introduced 'Reading Period' starting this year. A period of 20 minutes was allotted and within this time frame, they read various modes of literature under the guidance of their class teachers. Once they finish with one book, they can switch to another after producing evidence of completion. Seemingly, their spelling and vocabulary are greatly enhanced apart from the normal adventures and pleasures that they get from reading. This ultimately had made them love the books.

# 3. Conduct of Co-curricular Activities

One of the ways to broaden their learning is through the provision of different learning platforms like literary, cultural, and sporting activities. We have provided multiple literature platforms like quizzes, reading, rhyme competitions, and one notable activity was the conduct of literary carnival (Wall magazine) on 'International Literacy Day'. Students from all grades (Upper primary) took a great deal of enthusiasm and curiosity in coming up with the resource on their walls. This indeed was a first-time experience for them to showcase their knowledge and expertise on various modes of literature which heightened their level of creativity.

Many more cultural and sporting events have also taken place in the school leading to students' development of skills and values which are necessary in this diverse world.

#### 4. Remedial and Study Hours

Students performing lower than the mainstream in in the midterm were identified and are being given separate remedial classes daily. The timetable for the remedial programme is in place and for the duration of 30 minutes (after the normal instructional hours), the concerned subject teacher provides remediation in the most convincing and comprehensible ways.

The unique practice that we adopted this year was the study hours for all irrespective of boarders or day-scholars. Before a month's time to examine, students come for their morning studies at 6 am till 7 am and from 4 pm till 5 pm for evening studies respectively. During this time, the Teacher on Duty (ToD) takes full charge of guiding and monitoring their learning.

With these approaches, students were somehow able to regain their lost learning and skills which they have been deprived of for a year. Our learners were once again able to rejoice in the friendly school environment with which positive learning is taking place. We are with the greatest hope and prayers that such a crisis does not occur in the near future leading to massive disruptions like today. Even in the worst-case scenario through such national disruptions, we have the School Preparedness and Response Plan (SPRP) in place which gives us some cushion.

Karma Dhendup, Teacher, Sarjung Primary School

#### **Best Practices at Gomdar Central School**

Gomdar Central School is located in a sleepy, scenic village called Tsangchilo which is 71 kilometers away from Samdrup Jongkhar.

This modest school which started as a primary school in 1981 has undergone up-gradation to Higher Secondary School in the span of two decades. At present, the school caters to 630 students, 36 teachers, supported by 27 supporting staff.

The school has been managed by 7 Principals ever since its establishment. Today the school is run by Mr. Nima Gyeltshen, who is a seasoned leader.

The school is currently moving ahead at a much greater speed in terms of educating our young minds. Like any school across the country, Gomdar CS also has numerous good practices worth sharing. The school proudly some of the best practices prevailing in the school:

# **20 Minutes Reading Culture**

The best practice of Gomdar CS is the morning reading culture for 20 minutes every day. It helps not only the students but the teachers and staff to improve their language, intellect, and grammar. It inculcates reading habits in us. Two or three staff are delegated to each class to monitor the reading session. It also gives us an opportunity to explore, read and know varieties of reading materials in that short and precious hour.

Throughout the week, both staff and students are seen spending their time reading numerous genres. It has not only enhanced the academic performance of the child but also helped students to gain knowledge, explore the new world beyond, improve vocabulary, concentration, and essential reading skills.

Instituting reading culture has boosted their academic learning performance. It also contributes to the enhancement of wisdom in children.

# **Morning Aerobic for Boarders**

Another good practice is morning aerobic for students. It is done from 5-5.30AM in the morning. It has been an effective approach to keep the students active and healthy. All border students attend the aerobic sessions.

The aerobic and yoga for 30 minutes has definitely made our students feel better and ready for the day.

The program is coordinated by the SSI of the school with support from the non-academic head.

# **Digital/Smart Classrooms**

One area Gomdar CS can boast is the well-equipped ICT facilities. The teachers deliver lessons using ICT facilities in classrooms such as interactive boards, projectors, TVs etc. which many other schools are deprived of.

One of the huge advantages is that it has the potential to improve the teaching and learning process by enabling students to access information and engage in interactive learning experiences. The majority of

students explore the usage of interactive boards and internet facilities. The school has an internet bandwidth of 9mbps connected through wireless and Ethernet cables.

Taking advantage of such facilities, the online record-keeping of the attendances, lesson plans of teachers, CA submission, preparation of results, and Google classroom learning is fully ensured.

Besides these facilities, teachers are also provided with laptops for teaching-learning purposes. The school has 35 laptops as of now.

To enable fair distribution and good learning experiences on the recommendation of Chief DEO during the SPMS visit, the school has a plan to re-distribute the facilities for different classrooms to ensure smart classrooms as given below:

- Ø PP-III: One interactive board, projectors and TVs
- Ø IV-VI: One interactive board, projectors and TVs
- Ø VII-VII: One interactive board, projectors and TVs
- Ø IX-X: Two interactive boards and projectors
- Ø XI-XII: One interactive board and projectors

With this re-distribution, the academic performance will definitely be improved at all levels in the school.

# Peer Learning Circle/Doubt Book

The idea of peer learning or doubt books was born when the academic committee met to intervene in the academic performance of the students in the 2021 academic session.

In this group, the different learners are grouped together for learning. The high achiever of the group leads the group in their own comfort zone, expressing their weakness and strength. So this provides learners an opportunity and responsibility to encourage self-learning. It also engages students through cooperative learning and enhances academic performances.

If the students have doubts about their subject, they jot down in the book and ask their friends for clarification. They can also come to teachers to clarify their doubts. It is maintained peer-group-wise.

The monitoring of the doubt book by the teacher is done weekly. It helps students to clear their doubts to uplift their academic learning.

# **Live Music during Cultural Programs**

One specialty about Gomdar CS is children are able to perform live music during important functions in the school. They display traditional musical instruments such as *yangchen*, *dramnyen* and flute. This way music becomes one of the culturally binding influences for our children and becomes the source of transmitting knowledge, history, nationalism and spirituality.

The school has currently two yangchens, two dramnyens, and a pair of flutes.

**Drig-lam Day**: Etiquettes are an essential part of our life, especially as Bhutanese citizens. Driglam Day allows students to keep in contact with basic etiquettes like eating, wearing gho and kira, and wearing kabney and rachu. This practice not only helps in promoting the Bhutanese culture and tradition but also provides a platform to show respect to the king, country, and people.

At Gomdar CS, every Monday is observed as Driglam Namzha Day. On this day, all the staff and students from classes IV-XI wear a kabney and rachu during assembly time. This is the day where the Driglam committee thoroughly monitors the students' dress code, wearing of kabney, rachu, and even their hair length.

It's one of the best practices in our school as it allows our students to preserve our culture. Having Drig lam namzha day every Monday has instilled the Bhutanese values and unique culture which is spelled in one of the pillars of GNH.

After the class, there is also a session where the staff in groups deliver driglam classes for about 30 minutes.

# Patriotic Day: Zhabten Day

Wednesday is marked as Patriotic Day. On this day, the students do not recite a morning prayer 'Jamyang Seldoep', and the national anthem. The children gather in the assembly ground and straight away sing Zhabten of His Majesty the King. Before the lesson for classes begins, every subject teacher talks about the significant contributions of the kings and forefathers.

The day is to help children pay tribute to His Majesty and develop a sense of patriotism.

# Collaboration/Teamwork/Synergy/Whole School Approach

The most important aspect of leadership in the school is to promote Collaboration/Teamwork/Synergy/ Whole School Approach. The school is always striving towards it.

All the staff come together in a team & work together towards achieving common goals. Every activity in the school is carried out successfully with the presence and involvement of every staff in the school. The staff draws support from each other in any field and delegates tasks that allow each individual in school to feel effective which contributes to school improvement.

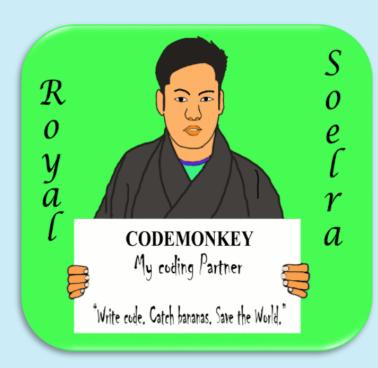
The school deeply believes in Helen Keller's quote, "Alone we can do so little; But together we can do so much." All staff is engaged in the task/events collaboratively at the school or community level. Some prominent examples of teamwork are cleaning of water source on 15<sup>th</sup> May and maintaining of GC road on 8<sup>th</sup> November 2021 respectively.

**Gomdar Central School** 

# **CODEMONKEY- Royal Soelra**

# Why it is Special?

As we are driving in the world of automation, digital skills and values are the indispensable watermarks that one should possess in order to adapt to the fast-changing world. The conduct of daily activities is already dominated by the extensive use of emerging technologies. For instance, the most widely used social media platforms such as Facebook, Wechat, Telegram, etc... have lengthened the effectiveness of communication and social networking to the maximum possible degree.



Moreover, business and banking, research and education, medical advice and counseling, monitoring and management, games and entertainment, service delivery and employment, instant news and information, office work, and many other activities are being automated and eased by leveraging the technologies such as system, software, websites, and applications. These ubiquitous technologies are solely developed with the use of programming languages. Programming skills are now necessary for every individual to become globally competent. One should be prepared and enabled to communicate with computers.

Programming language is a set of grammatical rules for instructing a computer or computing device to perform specific tasks. It is also known as high-level language owing to its user-friendly and easily understandable nature. It's never too late for us to learn coding and all expert programmers were also beginners then. As a beginner, understanding the concept in programming languages is quite challenging, however, CodeMonkey always lends its hand in learning the programming languages easily.

CodeMonkey is a fun, educational game-based web application where kids learn coding without any prior experience. Through its award-winning game, they learn coding through step-by-step tutorials within a number of challenges that provide space to learn real programming languages and acquire coding skills. Eventually, kids will also develop computational, collaboration, reasoning, problem-solving, critical and

logical thinking skills while solving the challenges under each course. Parts of CodeMonkey courses are available for free with a trial account, but users must pay to access a more advanced curriculum.

Aren't our children so fortunate to get complete access to all the available courses in CodeMonkey? This promising online platform was gifted by Our Beloved King to all the children across the country. It was said that this platform was bought for around Nu.27M on subscription-based. All our children deserve an opportunity to become creators instead of becoming consumers of computer science. Golden opportunity should not be missed by any one of our children and ICT teachers should play a vital role in ensuring them right track to complete all the assigned challenges before their expiration. Should they complete the course, no doubt that they develop fluency in coding languages?

I on behalf of all the children of the SJ *Sherig* family would like to extend our heartfelt gratitude to His Majesty the King for gifting us this grand opportunity to feel the sense of digitalized future. I promise to remain all-time supportive of my students in helping them to update ICT skills and values. May these acquired skills and values help our children survive in the digital world and help to boost the economic development of our country in any possible way.

#### KADRIN CHEY MEWANG CHOG!

Ugyen Jamtsho, ICT Teacher, Phuntshothang Middle Secondary School

# **Dropping out of School**

"Education makes the people easy to lead but difficult to drive: easy to govern but impossible to enslave"Peter Brougham. People over the globe are weak enough to be stronger because they view from a different
angle, unable to see the difficulties they face great opportunities. Dropouts in school have been an important topic in education as the number of dropouts has been increasing over the years. Leaving schools
increases the unemployment rate, social stigmatization, and other issues.

A person dropping out of school will face social stigma. We live in a century where people are valued and respected based on their profession and abilities to do something for people. Therefore, dropping out should not be an option rather one must start to recognize the difficulties as opportunities. Moreover, people consider dropout children as a nuisance and problematic in the community.

The increase in the rate of dropout youths would lead to a significant increase in crime rates. This is due to the lack of skills in finding a job which may leave them with no source of income for their living. With no other option than to commit crimes to earn their living, they get involved in criminal activities. The jobless youths may get addicted to substances due to pressure from making a living. As per some news so far, it is said that the number of graduates unemployed is increasing yearly. Hence, more educational attainment leads to higher earning and reduces crime.

A person without an education is like a bird without wings. Drop-outs youth are offered fewer job opportunities as compared to those people who have higher qualifications and skills. Across the world, unemployment increases daily due to competition created by the people. As per the survey of Bhutan in the year 2020, the unemployment rate had increased to 3.74% in 2020 from 2.27% in 2019. An increasing rate of 1% in the unemployment rate is a concern as it leads to a reduction of Gross Domestic Product by 2%. Thus, putting education first will never mislead to regretful life.

To conclude, refrain from dropping out of school to overcome the challenges of being socially neglected, offered with only a few job availabilities, and getting involved in criminal activities. Therefore, being wise before dropping out of school will be helpful than dropping out eagerly and regretting later.

Tshering Chezom, Class X, Jomotsangkha Middle Secondary School

#### Greed

Mahatma Gandhi once said, "The Earth provides enough to satisfy every man's needs, but not every man's greed". A person's greed is infinite, as big as the universe. Greediness reflects how ungrateful you are, will repel you from other people, and at last, will be your self-created prison.

Greed is the image of what you are. It is a storm in our life, which takes away our minds and body. You're not aware of where you would end up. As greed takes over you, nothing is enough for you. You are not thankful for others when they give you small gifts and things. At first, greed may be just a cool breeze that everyone enjoys but, at some point, it may turn into a tornado which brings misery to everyone. It will be a disaster.

Greed will repel you from other people. It will draw the boundary between you and other people. You will end up getting ignored by your loved ones since you abandoned them because of your greed. Greed can

overshadow essential aspects of life. Compassion, selflessness, kindness; these qualities will be out of your life. People will dislike you when you are blindfolded and least caring for anyone other than yourself. Thus, by the end of the day, no one will be there for you by your side.

Nothing will satisfy your desires and expectations. Your belief in accomplishing everything you want might end up choosing the wrong way. Since you won't care about others, others won't care about you too. You might lose everything and everyone while trying to fulfill your greed.

It is impossible to get rid of greed completely. However, we can set a limitation. One needs to be thankful for every little thing and appreciate life. By doing so, we can rebuild this world into a kinder and peaceful place.

Tshewang Choden, IX 'A', Jomotsangkha Middle Secondary School

# An Endeavor towards Chilli Self-sufficiency

Commercial production has been an issue for agricultural produces in the Gewog mainly due to the availability of produces from across the border at cheaper rates which in turn discourages our farmers to venture into large-scale cultivation. However, the closure of the international border due to the recent pandemic has in fact encouraged our farmers to take up farming towards self-sufficiency.

In this context, the Agriculture Sector of Langchenphu Gewog with support from Dzongkhag Agriculture Sector, Department of Agriculture, Commercial Agriculture & Resilient Livelihoods Enhancement Programme (CARLEP), and other relevant stakeholders initiated winter chili cultivation both with an individual as well as groups starting FY 2019-2020 under fund support of Economic Contingency Plan (ECP), National Organic Flagship Program (NOFP), Gewog Development Grant (GDG), CSI loan in the form of seeds, seedlings, protected agriculture inputs, dry land irrigation materials, and structures, electric fencing, bio-pesticides, etc.

Initially, only 15 households took up the winter organic chili production on a total of 5. 6 acres of their registered land. The total production of organic winter chili then was 1.53 MT.

The acreage drastically increased to 61.5 acres in FY 2020-2021 with a total production of 12.6 MT valued at Nu.32,50,000/-.

Unfortunately, among others, a marketing issue was experienced during the peak production season of FY 2020-2021, which discouraged our farmers to expand the area of cultivation. In the current fiscal year (2021-2022), a total of 47 acres is under winter chili cultivation taken up by 54 households in the Gewog. The first harvest of 35 kg of organic chili was made in the month of November.



However, the initiative motivated our producers to great extent and contributed immensely to the rural livelihoods. Further, the planners and farmers also learned lessons for effective future intervention in producing winter chili and have already initiated staggered cultivation which is expected to address the issue of market.

Sonam Dorji, Langchenphu Gewog

# Citrus Canopy Management Initiative: A story of positive impact from Orong Gewog

Canopy Management is vital for a good harvest in citrus-like in any other fruit trees. The old citrus fruit trees can be rejuvenated if managed properly and timely.

Towards this, a two-day citrus canopy management program was organized at Belam village under Orong Gewog with support from Agriculture Research and Development Center-Bajo in collaboration with National Citrus Program in the FY 2019-2020. A total of seven interested households with about 60 old citrus trees were benefited from the program in the village.





Today, most of the households are happy to see the new shoot growing from most of the old trees and have positive attitudes towards the rejuvenation initiative of the Government which otherwise had less response from the community in the past. Such initiatives shall be upscaled where possible in the near future to boost the citrus industry in the Gewog.





Pelden Tshomo, AES-Orong Gewog

# Successful containment of a local outbreak of COVID-19 through community isolation and quarantine in rural Bhutan

P. Bhandari<sup>1</sup>, Kezang Dorji<sup>2</sup>, Minjur Dorji<sup>3</sup>, Ugyen Pema<sup>4</sup>, Tshokey<sup>5</sup>

**Problem**: Bhutan is facing the second wave of COVID-19, with recent surge of cases from several districts on the southern border. A remote sub-district of Jomotshangkha on the south eastern border, was suddenly caught with a huge number of cases in May 2021, overwhelming the existing health facilities.

**Approach**: Community level isolation centers with capacity to accommodate and manage large number of cases were established in a short period of time. Primary and secondary contacts were home quarantined with the enforcement of strict lockdown in the affected areas.

**Local Setting:** Jomotshangkha is a remote sub-district in south eastern Bhutan with some of the most farflung and mountainous villages in the country. With a population of about six thousand (2017), the health care needs of the sub-district are met by four health centers with only one medical doctor for the population. Several households live more than three hours from the nearest road heads.

**Relevant Changes:** Health authorities managed majority (68%) of the patients in the community level isolation facilities with limited health staff. All primary and secondary contacts were home quarantined.

**Lessons Learnt:** Majority of COVID-19 cases can be successfully managed at the community level without the need of sophisticated infrastructure and specialized manpower. This becomes a logistically convenient and resource saving intervention in rural and resource poor settings.

#### Introduction

COVID-19 has become a devastating health emergency and calamity of our times with more than 183 million cases and close to 4 million deaths in the last one and half year<sup>1</sup>. Bhutan saw the first case of COVID-19 on 5<sup>th</sup> March, 2020 at the national referral hospital<sup>2</sup>. As of June 2021, Bhutan has reported a little over 2100 COVID -19 cases and one death<sup>3</sup>. In the first year of the pandemic, the country saw two nationwide lockdowns lasting for over three weeks. Bhutan has successfully vaccinated 94% of the eligible population with the first dose of COVISHIELD vaccine in March-April 2021<sup>4</sup>.

Most of the cases are clustered in the southern districts of the country bordering the Indian states of West Bengal and Assam. All the cases of COVID-19 till now had been managed in referral hospitals identified with beds for COVID-19.

We elucidate the first community level management of a local outbreak of COVID-19 in a rural setting in Bhutan.

# Health Infrastructure

The sub-district of Jomotshangkha has four health centers distributed in various strategic locations based on the catchment population. Of these, three are primary health care centers manned by basic health workers. Only one of these health centers has a full time qualified medical officer and serves as the referral hospital for the entire population of the sub-district. As all these health centers are small and have only basic health amenities, there was no space and manpower to accommodate COVID-19 cases. The nearest center with RT–PCR testing facilities is three hours drive, involving travel through the Indian state of Assam.

# **COVID Preparedness**

Jomotsangkha, being a border sub-district, had always been on high alert for imported cases of COVID-19. In fact it was the first region in the country to undergo a brief lockdown following a suspected case way back in May 2020. Local COVID-19 taskforce comprising of relevant sector heads, had been working round the clock to keep strict vigilance on the virus. Regular surveillance and testing of high risk groups was being conducted from time to time. Lockdown protocols and mechanism to deliver essential services was in place. For the clinical management of confirmed cases, it was the plan of health authorities to transfer all COVID-19 cases to the nearest Regional Referral Hospital in Mongar, which is more than 8 hours drive.

# The COVID-19 Outbreak in Jomotsangkha

Much to the surprise of the local authorities and the entire nation, Jomotshangkha became the hotspot of COVID-19 after 20<sup>th</sup> May, 2021. In a span of three weeks, a total of 179 cases were reported with highest single day case reports of 82. More than 1000 primary and secondary contacts were identified. The index case had travelled from another neighboring district and stayed for over a week in one of the remote villages of Jomotsaangkha during which he interacted with almost all the villagers. Soon after this, three mass gatherings for a funeral and two local festivals were reported following which the virus spread rampantly across most of the villages. Experts believed that this was the worst case scenario for the country with an infection rate of about 25 per 1000 population<sup>6</sup>.

#### **Approach**

As a rapid response to the outbreak and to ensure a swift control over the situation, the following measures were taken immediately and as soon as the first few cases were confirmed on 21 May, 2021. The Local Taskforce and the health staff backed by the regional and national taskforce were instrumental in containing the situation.

#### Complete lockdown

As soon as community transmission was established, the entire sub-district (Dungkhag) of Jomotsangkha was subjected to complete lockdown. All schools and offices were closed with many government officials

deputed for meeting the essential needs of the community. Essential health services and mobile clinic were continued during the lockdown. Essential supplies like ration and vegetables were dropped to the doorsteps with the help of volunteers wearing appropriate personnel protective equipment.

# Risk stratification

The entire villages in the Dungkhag were categorized into three groups for risk identification, testing and lockdown relaxation. The Green Villages had no cases or contacts. Yellow Villages had primary or secondary contacts but no positive cases. The Red Villages had cases and contacts.

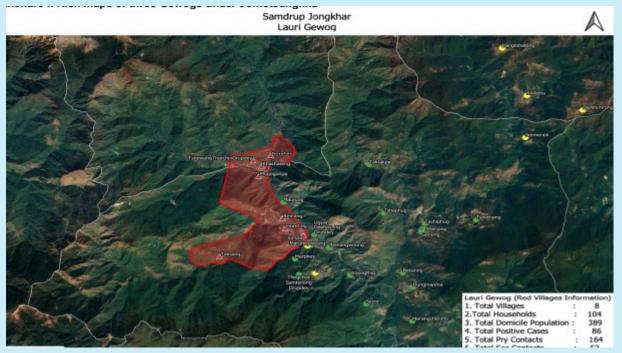


Figure 1: Mapping of Red, Yellow and Green Villages using Google Earth

# Mass testing and screening

Following the lockdown, three rounds of mass testing with RT-PCR were conducted in all the villages. Everyone in Red and Yellow Villages were tested and one member from each household was tested from the Green Villages. Testing was done at the beginning of the outbreak, on Day 14 and Day 21 of lockdown. Symptomatic individuals were tested as and when the symptoms were reported. A total of over 8000 samples were collected and tested during the outbreak.

#### Community isolation and quarantine

As a swift measure to the outbreak, 2 large community halls in two villages of Serthi and Lauri were converted into isolation centers. Each of these could accommodate around 50 cases each. One more office complex at Jomotsangkha town was converted into isolation ward with a capacity to accommodate 25 cases. Basic facilities like oxygen and pulse oximeters were provided to these centers.

While majority of cases were managed in these three centers, there were some elderly and differently-abled persons who were managed at home. Health workers monitored their health through phone calls and home visits.

As there were more than thousand primary and secondary contacts, it was beyond the authority's capacity to provide facility quarantine to all the contacts. Therefore, they were home quarantined in their own community with strict security measures to monitor compliance.



Figure 2: Community hall turned COVID-19 isolation ward in Minjiwoong

# **Medical Response**

To respond to this outbreak the country's highest decision makers were involved. The Prime Minister conducted a detailed meeting with the national and regional taskforces. Medical teams comprising of two specialists (physician and pediatrician), nurses and ambulances were immediately mobilized to the affected area. Essential supplies like oxygen, pulse oximeters portable ventilators, x-ray machines and basic medications were mobilized.

# **Patient Management**

Each of the community isolation centers were manned by two nurses, two De-suups (volunteers with some training in health and first aid) and one security personnel. While the nurses provided direct patient care and engaged in sample collection, the volunteers and security personnel were involved in ensuring strict compliance of isolation, reaching supplies like food and essentials and the cleanliness of the centers. All categories of staff worked in full protective attire. To limit exposure to additional staff, the same cohort of staff volunteered to continue the duty till the last patient was discharged from all the centers. Patient care included daily visits by the nurses, symptom review, vitals monitoring and telephonic follow up with the specialists.

#### **Relevant Changes**

A total of 179 cases surfaced in Jomotsangkha sub-district during this outbreak. Of the 179 total cases, 123 (70%) cases were managed at the community level including 11(6%) cases that were managed at home.

Remaining cases were shifted to the district headquarters. Of the 123 cases managed within the community, there were 19 (10.6 %) children and adolescents. The youngest patient was 5 months old and the oldest was 94 years old. Few patients required symptomatic treatment for cough and fever. No patients required oxygen or ventilator support. One elderly patient with co-morbidities was treated with Remdesivir and IV antibiotics. To save resources and staff exposure, isolated patients were tested on Day 21 of isolation and all patients had turned PCR negative. The recovery rate was 100 percent with no mortality.

The table below shows the isolation centers with number of patients and recovery rates:

| Sl<br>no | Community Isolation<br>Center | Total cases | Recovered | Recovery<br>Rate | Mortality |
|----------|-------------------------------|-------------|-----------|------------------|-----------|
| 1        | Lauri Isolation               | 49          | 49        | 100%             | 0         |
| 2        | Serthi Isolation              | 47          | 47        | 100%             | 0         |
| 3        | Dungkhag Isolation            | 19          | 19        | 100%             | 0         |
| 4        | Home Isolation                | 11          | 11        | 100%             | 0         |
|          | Total                         | 126         | 126       | 100%             | 0         |

Table 1: Isolation centers, patient numbers and recovery rates

#### **Lessons Learnt**

The decision to isolate and manage most of the cases in the community settings became a huge learning experience for the country. There were several advantages to this approach. Firstly, people felt more at home when they were isolated and treated within their own community. The location of the isolation facilities amongst the lush green vegetation provided a peaceful healing environment for the patients. Patients enjoyed food prepared by their own community members rather than a hospital diet. Many were able to see their own homes and villages through the windows of the isolation centers rather than the four walls of the hospital. This probably contributed a lot to the psychosocial aspects of healing and uneventful recovery.

Secondly, cost of travel and transportation requirements was reduced. The risk for further spread of the virus to other districts during the transportation process was minimized. Thirdly, as many patients were accommodated in a single center, the need for more medical staff was reduced, thereby reducing the risk of exposure to heath staff.

Strict lockdown and quarantining of close contacts at their own homes was a welcome move for the community. They were able to continue with their household chores and look after their cattle. This saved a lot of costs for running separate quarantine facilities away from people's homes.

Asymptomatic or mildly symptomatic patients without significant co-morbidities can be effectively managed at the village level isolation centers. This will also reduce the fear and stigma associated with COVID -19 and further enhances community understanding and preparedness for future outbreaks<sup>7</sup>. Thus, in resource poor settings with limited hospital beds, community level isolation centers are effective alternatives to hospital beds for COVID-19 outbreaks.

#### **References:**

- 1. WHO:Weekly-epidemiological-update-on-covid-19; https://www.who.int/publications/m/item/ 6-July-2021
- 2. Tshokey, T. (2021). An update on COVID-19 in Bhutan. *Bhutan Health Journal*, 6(1), III. <a href="https://doi.org/10.47811/bhj.91">https://doi.org/10.47811/bhj.91</a>
- 3. National situation update on COVID 19;http://www.moh.gov.bt/national-situational update-on-covid-19-108
- 4. Dorji T, Tamang ST. Bhutan's experience with COVID-19 vaccination in 2021. BMJ Global Health 2021;6:e005977. doi:10.1136/bmjgh-2021-005977
- 5. Population and Housing Census, 2017; National Statistics Bureau of Bhutan; www.nsb.gov.bt
- 6. Younten Tshedup, <a href="https://kuenselonline.com/jomotshangkha-outbreak-is-a-worst-case-scenario-for-the-country/">https://kuenselonline.com/jomotshangkha-outbreak-is-a-worst-case-scenario-for-the-country/</a>
- 7. Panigrahi SK, Majumdar S, Galhotra A, Kadle SC and John AS (2021) Community Based Management of COVID-19 as a Way Forward for Pandemic Response. *Front. Public Health* 8:589772. doi: 10.3389/fpubh.2020.589772

# **Royal Civil Service Award 2021**

# SAMDRUP JONGKHAR DZONGKHAG



A total of 84 civil servants received Royal Civil Service Award 2021 in Samdrup Jongkhar Dzongkhag in the following categories on December 9, 2021:

#### A. Dedicated Service Award

30 years (Gold) : 06 recipients
 20 years (Silver) : 14 recipients
 10 years (Bronze) : 61 recipients

**B. Lifetime Service Award**: 03 recipients

"As underpinned in our age-old saying, "the golden yoke of secular laws," accountability must henceforth become the cornerstone of governance. We must correct those who deviate, be firm with those who do not deliver, replace those who are incompetent, and terminate those who underperform and have therefore become a liability to our system and nation. We must not hesitate to expose those who engage in corrupt practices, so that we send a strong signal to deter others from doing so."

- His Majesty King Jigme Khesar Namgyel Wangchuck (His Majesty's Address to the Nation on the 114th National Day, Tashichhodzong)

# Winners of Art & Essay Competitions on the theme "BHUTAN FIRST"



*SJ SHERIG* organized the Art & Essay Competitions on the theme "**Bhutan First**" to commemorate 114th National Day in the following categories:

# A. Essay Competitions:

1. Category 1 (English) - Classes XI-XII

2. Category 2 (Dzongkha) - Classes IX-X

# **B.** Open Art Competitions:

1. Category 1 - Classes IV-VI

2. Category 2 - Classes VII-VIII

# **Journal Publication Team**

# **Overall Coordination:**

Mr. Kinzang Dendup, Chief Dzongkhag Education Officer, Samdrup Jongkhar

# **Editing & Proofreading:**

Mr. Khem Prasad Thapa, Vice Principal, Garpawoong Middle Secondary School

Mr. Sonam Wangchuk, Dzongkhag Economic Development Officer, Samdrup Jongkhar

Mr. Sherub Jamtsho, Teacher, Phuntshothang Middle Secondary School

Mrs. Tshering Yangzom, Teacher, Phuntshothang Middle Secondary School

Mr. Kinley Sonam Drukpa, Teacher, Karmaling Higher Secondary School

Mr. Cheku Norbu, Teacher, Karmaling Higher Secondary School

Mr. Sonam Lhendup, Teacher, Wangphu Primary School

# **Design & Layout:**

Ms. Kezang Yuden, Asst. ICT Officer, Samdrup Jongkhar

# TASHI DELEK