

Best Practices in Dibrugarh University

Case 1:

1. **Title of the Practice:** Transparent Admission Process
2. **The Context that required the initiation of the practice:** Two affiliating colleges viz., North Lakhimpur College and J.B. College, Jorhat of Dibrugarh University have been recognized as Autonomous Colleges by the University Grants Commission. Earlier the students of the affiliating colleges of Dibrugarh University were admitted to different programs of the University based on the marks obtained in the qualifying examination. However, there have been apprehensions in the student community about the admission procedures as the students from the two autonomous colleges had different syllabi and examination systems in place. To address these issues, the University had decided to introduce a Transparent Admission Procedure based on an entrance examination.
3. **Objectives of the Practice:**
 - (i) To win the confidence of the student community in regards to the admission procedure
 - (ii) To streamline the admission procedure in a more systematic way
 - (iii) To generate an online database of the applicants seeking admission to higher studies
4. **The Practice:** The university has attempted to ensure transparency in the admission procedure by (i) notifying admission in the daily news papers of the state and the University website, (ii) online submission of applications, (iii) addressing issues related to screening of the applications by a committee formed by senior faculty members Department-wise, (iv) and avoiding any personal meetings to the prospective students to ensure transparency to the extent possible.
5. **Obstacles faced if any and strategies adopted to overcome them:** Not applicable
6. **Impact of the Practice:** There is total transparency in the admission system which is evident by the fact that the university had to reply only one RTI application, that too, regarding the answer keys of the question paper in the Applied Geology subject. There was no pressure from any quarters or community during the whole admission process.
7. **Resources required:** An online admission portal was required to be developed for the whole process. The portal was developed by a start-up company KBCube of Dibrugarh University.
8. **The Institution:**
 - (i) **Name of the Institution:** Dibrugarh University
 - (ii) **Year of Accreditation:** 2017
 - (iii) **Address:** Dibrugarh, Assam-786004
 - (iv) **Grade awarded by NAAC:** A
 - (v) **Email:** iqacdu2013@gmail.com
 - (vi) **Contact Person for Further details:** Dr. H.C. Mahanta, Registrar
 - (vii) **Website:** dibru.ac.in

Case 2:

1. **Title of the Practice:** Students Safety Insurance Scheme
2. **The Context that required the initiation of the practice:** Students Safety Insurance Scheme was instituted in 2008 and has been in vogue. It is a component of umbrella insurance, i.e., social insurance.
3. **Objectives of the Practice:** The scheme is initiated with a view to providing insurance to the student community of the university as a safety measure.
4. **The Practice:** The yearly subscription is Rs. 35.00 per student. Premium structure is given as follows:

Session	No. of Students	Amount of premium deposited (in Rupees)
2018-2019	4408	Rs. 1,54,280/-

5. **Obstacles faced if any and strategies adopted to overcome them:** Not applicable
6. **Impact of the Practice:** A number of students who have met with accidents and suffered from physical or mental trauma have benefitted from this safety insurance scheme.
7. **Resources required:** A fund has been allocated for paying the premiums.
8. **The Institution:**
 - (i) **Name of the Institution:** Dibrugarh University
 - (ii) **Year of Accreditation:** 2017
 - (iii) **Address:** Dibrugarh, Assam-786004
 - (iv) **Grade awarded by NAAC:** A
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 - (vi) **Contact Person for Further details:** Dr. H.C. Mahanta, Registrar
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Case 3:

1. **Title of the Practice:** Internationalization
2. **Objectives of the Practice:** To establish a framework for the development and integration of internationalization in the University's strategy, organization, diversity, culture and governance.
3. **The Context:** Internationalization applies to and integrates across curriculum content and development, research and scholarship, student orientation and experience, staff and staffing, commercial and service delivery. It also provides a guiding context of the vision and mission of the university. The Internationalization policy applies to all the teachers, employees and students of the university and also members of the university's authorities. It also provides a framework for the university's partner institutions to operate in when they are dealing with university programs.
4. **The Practice:** The internationalization efforts, activities and initiatives at Dibrugarh University will be carried out by the Office of the International Affairs, Dibrugarh University. The responsibilities of the office will be to further strengthen university's global footprint. The office looks after the following issues of international student admissions and student events, initiatives and collaborations:
 - Develop a clear and focused strategic student enrollment plan.
 - Provide an easily accessible web based information for selection of international students
 - Enhance promotional activities
 - Encourage incoming/outgoing student mobility to international areas of activities
 - Encourage professional development of teachers and staff by engaging them in international research projects and international faculty development programs
 - Enhance the access to external funds by applying for various externally funded projects
 - Enhance inflow of international expertise and perspectives through investment in engaging visiting professors and fellows.
 - Develop International student feedback system to improve academic, administrative and infrastructural resources necessary for assuring optimum international student experience.
 - Continuously revise all curricula by benchmarking with the best universities abroad. Ensure a local and global context to all academic programs and courses thereby making a program truly global.
 - Develop comprehensive regulatory evaluation and reporting framework to ensure that the internationalization strategy is successfully implemented.
 - Expand the international Alumni Network to help build a strong reputation in key countries and regions.

- Encouraging the researchers/faculty members for schemes of international collaborations administered by various Government and non-government initiatives.

5. Evidence of Success:

(i) An international collaboration has been made in line with the National Education Policy, 2020 under the aegis of “Association of Indian Universities”.

(ii) The Dibrugarh University has received the Going Global Partnership Collaborative Grant of the British Council in collaboration with Queen’s University, Belfast ,UK; Tezpur University, Assam, and Bodoland University, Assam, under the initiative of office of the International Affairs, D.U. With this grant of 80,000 GBP, the Department of Mathematics, Dibrugarh University and the Department of Economics, Queen’s University will lead in designing and developing a multidisciplinary transnational course on Strategic Networks and Computations which will be complete by 2023.

(iii) A total of 23 international students were admitted in various academic programs at Dibrugarh University for the academic session 2021-2022

(iv) Ms. Eleonora Fanari, Ph.D. Research Scholar, Autonomous University of Barcelona, Spain is allied as visiting fellow in the Department of Political Science, Dibrugarh University, Assam,India for her Ph.D. research.

(v) The following MoUs have been signed under the internationalization strategy of Dibrugarh University

1. Queen’s University, Belfast under Going Global Partnership program of British Council
2. University of Haifa, Israel on teaching and Research
3. Chinese Academy of Sciences, Beijing with Applied Geology
4. Russian State University for the Humanities, Moscow, Russia
5. World Fragrance Organisation, South Korea for offering course on Korean Language
6. University of Ethiopia, Ethiopia on research in Pharmaceutical Sciences.

(vi) Dibrugarh University commenced a One Year Certificate Course in Korean Language under a Memorandum of Understanding with the World Fragrant Cooperation, Republic of Korea. Under this scheme, Prof. Heeseon Park is at Dibrugarh University as Visiting Professor to impart Korean language education to students from Dibrugarh and nearby areas. The World Fragrant Cooperation announced a scholarship of 1000 US dollars for the first batch of students.

6. Problems Encountered and Resources Required:

- (i) Geographical remoteness of Dibrugarh University is a problem, but it is offset to some extent due to the railway station and airport in Dibrugarh.
- (ii) Dibrugarh University is a state university with limited resources. However, it has been able to offer various facilities to international students thus far.
- (iii) A hostel crunch was experienced in the last few years, but a new hostel to house international students is nearing completion.

Case 4:

Title of the Practice: ANALYSIS AND SYNTHESIS OF LOW RESOURCE LANGUAGES

Objectives of the Practice The objective of analysis and synthesis of low resource languages, such as Mising and Tai-Ahom, is to develop and improve methods and tools for accurately analyzing and synthesizing speech data in these languages. This can aid in the preservation and revitalization of these languages, the development of technology-based solutions for communication and education, and the empowerment of local communities.

The specific objectives for analysis and synthesis of low resource languages in Assam may include:

1. Developing and improving methods for collecting and transcribing speech data in these languages.
2. Analyzing the phonetic, phonological, morphological, syntactic, and semantic features of these languages to better understand their structure and organization.
3. Developing and improving speech recognition and synthesis technologies for these languages to enable more effective communication and language preservation efforts within these communities.
4. Building linguistic databases and resources for these languages to aid in future analysis and synthesis efforts.
5. Collaborating with local communities, organizations, and experts to ensure that analysis and synthesis efforts are culturally and linguistically appropriate, and to promote the preservation and revitalization of these languages.

The Context: The analysis and synthesis of low resource languages in Assam, such as Mising and Tai-Ahom, pose unique challenges due to the limited availability of linguistic resources and the endangered status of these languages. These challenges include the lack of standardized orthography, limited speech data, and limited linguistic expertise in these languages.

The lack of standardized orthography makes the analysis of speech data challenging, as there may be inconsistencies in the writing system or lack of written resources altogether. This can affect the accuracy of transcriptions and the ability to analyze the phonetic and phonological features of the languages.

Limited speech data is another challenge in analyzing and synthesizing low resource languages of Assam. Collecting sufficient and representative speech data can be difficult, as there may be a small number of speakers or limited access to recording equipment. This impact the development and evaluation of speech processing models, such as speech recognition and synthesis systems.

Furthermore, the limited availability of linguistic expertise in these languages pose challenges in accurately analyzing and synthesizing speech data. The lack of trained linguists who are

familiar with the phonetics, phonology, morphology, syntax, and semantics of these languages hinder the quality of analysis and synthesis efforts.

Resources for analysis and synthesis of low resource languages in Assam are scarce. Access to linguistic databases, tools, and resources is limited, and funding for research activities, such as fieldwork and equipment, is challenging to obtain. Collaboration with local communities, organizations, and experts is crucial in addressing these challenges and obtaining the necessary resources for analysis and synthesis efforts.

Despite these challenges, the analysis and synthesis of low resource languages can have significant benefits, including the preservation and revitalization of these endangered languages, the development of technology-based solutions for communication and education, and the empowerment of local communities. Innovative approaches, interdisciplinary collaborations, and leveraging existing linguistic resources can contribute to overcoming the challenges and advancing the field of speech processing in the context of low resource languages.

The Practice: The practice of analysis and synthesis of low resource languages, such as Mising and Tai-Ahom, involves several key steps, including data collection, transcription, linguistic analysis, and speech technology development. These steps are challenging due to the limited availability of linguistic resources and the endangered status of these languages.

1. To Identification of Tones of Tai and Mising words
2. To Verify of the tones through native speakers and experts of the respective Tai and Mising languages.
3. To Verify the meanings and uses of the Tai and Mising words from Native Tai speakers and experts
4. To Compile the glossary/dictionary (# 1/5 -*depending on the requirements)
5. Linguistic analysis of the target languages-
 - i. Collecting sentence specimens from native speakers of the Target communities, and identifying the respective class of the Tai and Mising gloss.
 - ii. Phonetic/Phonological analysis
 - iii. Morphological analysis
 - iv. Syntactic analysis
 - v. Semantic analysis
 - vi. Pragmatic analysis
6. To create a digital voice dictionary which contains voice files of the lexemes of the Tai Ahom and Mising Language.

- 7.To create a digital corpus of the Tai and Mising languages/literatures of northeast India for ready reference.
- 8.To develop a basic translation tool.
- 9.To develop a speech recognition system.
- 10.To develop a basic transliteration tools.

Evidence of Success

1. A collaboration (MoU) has been made with SIU-KA-PHA CHAIR, DEPARTMENT OF HISTORY, DIBRUGARH UNIVERSITY and CENTRE FOR COMPUTER SCIENCE AND APPLICATIONS, DIBRUGARH UNIVRSITY, to carry out the work in Tai-Ahom language.

2. 1st Mising language Unicode-based keyboard was developed and released during the released during the 22nd general conference of the Mising Agom Kebang (Mising Sahitya Sabha) at Suniram Basing Lotta at Goroimari, Bhimpora in Lakhimpur district. The news was published in Assam Tribune the link for the same is provided below.

<https://assamtribune.com/1st-mising-language-unicode-based-keyboard?infinitescroll=1>

3. The following research and review papers has been published in various Scopus, WoS and peer reviewed journals:

a.Sarmah A., Rehman R., Mahanta P., Dutta K., Bordoloi K., Borah K., Singh H. "A NOVEL APPROACH FOR AUTOMATIC SPEAKER IDENTIFICATION OF ASSAMESE LANGUAGE USING COSINE SIMILARITY AND ABSOLUTE MFCC FEATURE MATRIX", Journal of Theoretical and Applied Information Technology (2022), 100 (21), pp. 6552 - 6560, <http://www.jatit.org/volumes/Vol100No21/23Vol100No21.pdf>

b.Dutta, K., Rehman, R., Mahanta, P., Sarmah, A. (2022). "A Study on Feature Selection for Gender Detection in Speech Processing for Assamese Language", Information, Communication and Computing Technology. ICICCT 2022. Communications in Computer and Information Science, vol 1670. Springer, Cham. https://doi.org/10.1007/978-3-031-20977-2_6

c.Rizwan Rehman, Kaustuvmoni Bordoloi, Kankana Dutta, Nomi Borah, Priyakhi Mahanta, "FEATURE SELECTION AND CLASSIFICATION OF SPEECH DATASET FOR GENDER IDENTIFICATION: A MACHINE LEARNING APPROACH", Journal of Theoretical and Applied Information Technology, 98(22):3449, November 2020.

d.Ujjal Saikia, Jiten Hazarika, Rizwan Rehman “Analysis And Visual Representation Of Speech Signal Data Using Statistical Techniques”, International Conference On Recent Trends In Theoretical And Applied Statistics, 2020, Department Of Statistics, Dibrugarh University, Dibrugarh.

e.Ujjal Saikia, Rizwan Rehman, Jiten Hazarika, Gopal Ch. Hazarika, Predictive Analysis Using Regression Methods in Low Resource Language "MISING", 2nd International Conference on information systems & management science (ISMS) 2019.

f.Rehman. R., Hazarika G.C., Kardong D., “Feature Extraction and Analysis of Mising Speech Vowels”, IEEE International Conference on Signal Processing, Communication, Power and Embedded System (Scopes), June 2017.

g.Rizwan Rehman, Gopal Chandra Hazarika, D. Kardong, Intonation Pattern Analysis of Phonemes in MISING Language, International Journal of Computer Applications (USA), Volume 150/Number 5, Sep-2016, (ISBN: 973-93-80885-62-0), DOI: 10.5120/ijca2016911506, www.ijcaonline.org.

h.Sadiq Hussain , Rizwan Rehman , G. C. Hazarika, J. J. Kuli The First Step Towards Suffix Stripping of Mising Words Using YASS, International Journal of Language and Linguistics, Vol. 4(2), Page 74-79,2016., (ISBN: 2330-0205),
article.sciencepublishinggroup.com/pdf/10.11648.j.ijll.20160402.15.pdf

i.Rizwan Rehman, Gopal Chandra Hazarika, D.Kardong, Auditory Scale Analysis and Evaluation of Phonemes in MISING Language, International Journal of Computer Applications (USA), Volume 113/Number 15, 2015, (ISBN: 973-93-80885-62-0), www.ijcaonline.org

j.Rizwan Rehman, Gopal Chandra Hazarika, Analysis and Recognition of Vowels in SHAI'YANG MIRI Language using Formants, International Journal of Computer Applications (USA), Volume 89/Number 2, 2014, (ISBN: 973-93-80880-52-4), www.ijcaonline.org

4. Dr. Rizwan Rehman has obtained his Ph.D. degree for his work on Mising Language titled "Analysis and Synthesis of Mising Phonemes".

5. Mr. Ankumon Sarmah and Ms. Kankana Dutta have registered as Ph.D. scholars at Dibrugarh University to carry out work in Tai-Ahom Language.

Problems encountered and Resources Required.

Problems Encountered:

1.Lack of linguistic resources: The limited availability of linguistic resources, such as dictionaries, grammars, and corpora, make it difficult to accurately analyze and synthesize low resource languages.

2.Limited availability of speech data: Collecting sufficient and representative speech data is challenging, especially in remote areas where the language is spoken.

3.Cultural and ethical considerations: Collaboration with local communities and organizations requires sensitivity to cultural and ethical considerations, such as informed consent, intellectual property rights, and language rights.

Resources Required:

1.Linguistic resources: Developing and improving linguistic resources, such as dictionaries, grammars, and corpora, can aid in the accurate analysis and synthesis of low resource languages.

2.Speech data collection equipment: Collecting speech data requires appropriate recording equipment, such as microphones and audio recorders.

3.Computing resources: Linguistic analysis and speech technology development require computing resources, such as high-performance computing clusters and cloud computing services.

4.Expertise: Linguistic analysis and speech technology development require interdisciplinary expertise, including linguistics, computer science, and speech processing.

5.Funding: Sufficient funding is necessary to support the development and improvement of linguistic resources, speech data collection, computing resources, expertise, and community engagement activities.