

DP 702 | Communication Design Project II

TRAINING AND TEACHING AIDS IN MOUNTAINEERING

Instructional Videos on Rope Work

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Batch of 2017-19

Under the Guidance Of

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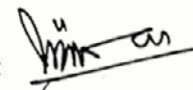
IDC School of Design
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SHEET OF _____

Approval

The project titled Training and Teaching Aids in Mountaineering: Instructional Videos on Rope Work, by Hassan Kumar Gundu of M.Des. Communication Design 2017-19 is approved as a partial fulfillment of requirements for Project 2 in M.Des (Communication Design) at IDC School of Design, IIT Bombay.

External Examiner:



Internal Examiner:



• Project Guide:



Chairman:



MY OWN

Declaration

I hereby declare that this written submission submitted to IDC School of Design, IIT Bombay, is a record of original work done by me. The written submission represents my idea in my words. I have adequately cited and referenced the original source. I also declare that I have adhered to all principals of academic honesty and integrity and have not misinterpreted or falsified any idea/ fact/ source in my submission. ***I understand that any violation of the above*** will be cause for disciplinary action by the institute and can also evoke penal action from the sources which have thus not been poperly cited or from whom proper permission has not been taken when needed.



Hassan Kumar Gundu
176450014

**“Those who travel
to mountain-tops
are half in love with
themselves, and half
in love with oblivion.”**

- Robert McFarlane

Mountains of the Mind: A History of a Fascination

THE

Abstract

Mountaineering is an **extremely dangerous sport**. It found its roots in India in the 1960's and from there on it kept growing constantly. Initially, the institutes which provided education to the people enrolling in these courses were meant to cater to the military forces of the country. But, ever since northern Himalaya became a centre of attraction for adventure sports in the country, the institutes opened up for civilians too who want to venture into this field.

The people who are the most dependent on them are the locals as it gives them an assurance of better livelihood after the course by becoming trek leaders, climbing guides etc. But, there is a huge mismatch in the comprehension of the locals attending these courses and the way in which the instructions are given. This often leads to half knowledge and learning difficulties to these people. Because the methodology carried out here is mainly in lines with the military personnel who have a basic form of education whose comprehension is way higher when compared to the locals.

This is where a component level design intervention is needed, that is introducing **new alternative ways of teaching** such as instructional videos, whose presumptions are minimum. Derives the context from these locals, builds proper mental models, demonstrates proper usage of technical equipment, builds mnemonics, analogies, proper mental models and explains the significance of the techniques being taught. The result of which should be a proper understanding of the subject, which aids in safe mountaineering practices for themselves and the others as the cost of an error in this field is too high.

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THE

Introduction

Because once the mountains catch you,
they really have you in some kind of submission

It was during a family pilgrimage back in the year 1999, that I had the first glimpse of these gigantic, spectacular landforms known as the mountains of Himalaya. Their sheer size, splendid view of Ice, Rock and Snow was enough to leave me in their never ending spell of awe which only grown stronger day after day.

Since that vey time I had my first encounter with them, I always had a question of what lies there at their top and why does no one ever dare to go up there looking for answers? But somehow that curiosity faded with time as I got caught with regularities and expectations of the society which made join the rat race of their till the year 2015, when everything changed at glimpse of the mighty Kanchanjunga on the 18th of May, 2015 at 7:35AM, from Sandakphu which reginited the curiosity which



Image: Kanchanjunga, 8585m from Sandakphu,

Credits: Adventure Nation

I thought was gone forever. And from that very day, I started on this very journey of exploring what lies far above the clouds, i.e farther than what the eyes can see.

Leading to a journey of self reflection, being one with the nature, respecting it. Adapting to it, and conquering the not the mountains but myself.

But, why do you do this?

This is a question that I've been trying to answer for so long and the closest answer that I've come till now is that ***untill and unless you are touched by a mountain till your very core you will never understand.***



Image: Jeethang Valley at Sunrise, Credits: Nikhil Fernandes

WHY — this topic?

Mountaineering & Exploration of places high up there, comes at a very big price

To explore the places know and unknown at high altitudes and to try to make a living out of it, one must be well versed with the skill of mountaineering because otherwise it is a deliberate suicide. For the same large number of people drop into these 5 mountaineering institutes in the country ran by the Government of India to learn these skills.

But because of a huge gap between the number of seats available and the candidates that are applying, the waitlist for these institutes goes upto 3yrs in advance. Upon that the pressure to perform in this much awaited course dawns upon the people who are trying to make a living out of it.

“ But due to unstructured learning, mismatched context, poor student to instructor ratio and various other socio-economic factors, the learning for these people becomes difficult exponentially during these mountaineering course.”

The knowledge, techniques and skills gained by these local people are one of the very few ways that they have to make their living better. Rather than just working as a porter for the expeditions in the area.

But due to unstructured learning, mismatched context, poor student to instructor ratio and various other socio-economic factors, the learning for these people becomes difficult exponentially during these mountaineering course. Most of them struggle to pass through these courses and even if they do, they end up with half knowledge which in this field is nothing more than a disaster waiting to happen. Where they risk safety of themselves and the others.

Also, there is hardly any kind of literature or learning material provided by these institutes to facilitate learning for these people and whatever that exists currently worldwide caters to people with formalized education and resources.

“ need of the hour to come up with new ways...”

Because of this, there is this need of the hour to come up with new ways of learning, education and training to cater to these audiences. The ones who have the biggest playgrounds for adventure sports in the world in their own backyard but have hardly any players to play in it.

“I will come again and conquer you because as a mountain you cannot grow, but as a human, I can.”

- Edmund Hillary

First person to summit Mt. Everest (1953)

UNDERSTANDING THE —————

Worldview of Mountaineering

Mountaineering as a whole and especially the ideology of West vs. East

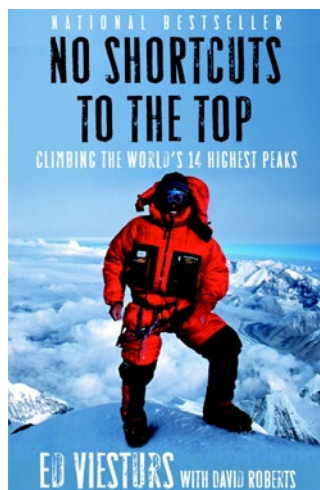
No one exactly knows as to when humans started to move out towards the mountains or started settling in their vicinity. And no one ever knew the answer to the fact that even though the life in the mountains is so hard, why people decided to live alongside them in the first place?

References



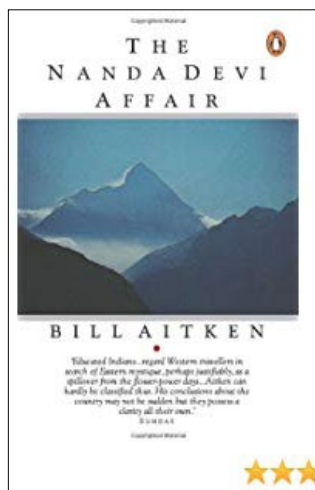
Loved by all -The story of Apa Sherpa

Apa Sherpa holds an extraordinary record: he climbed Mount Everest twenty-one times. In this biopic of his he talks about the harsh realities of the mountaineous regions of Nepal where the sherpa people put their lives in the most dangerous of conditions to make a livelihood.



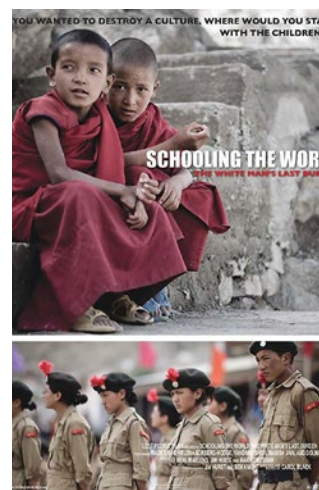
No shortcuts to the top - Ed Viesturs

Ed Viesturs is a legendary American mountaineer. He achieved the feat to stand atop the world's fourteen 8,000-meter peaks, without the aid of bottled oxygen. This book talks about his struggle and way of life up till this point. With a special emphasis on his nemesis "Annapurna".



The Nanda Devi Affair - Bill Aitken

In this book, Bill Aitken -it's author questions the mountain in focus -Nanda Devi, whether it's more than just a mountain. The book captures the trails in the Nanda Devi Sanctuary while sharing the vivid description of the Mountains of Kumaon and Garhwal.



Schooling the world - Carol Black

This documentary is shot entirely in the Ladakh region of India. It widely talks about how the westerners' method of schooling the children has lead to affecting the dynamics of the local communities culture and limits diversity by bringing in monotony.



Valley Uprising by Peter Mortimer

The movie primarily talks about the origins and rising of a climbing community and culture in the backyards of Yosemite Valley in America. It highlights the fact that how a bunch of individuals got bored with the way life was heading and decided to be something more.



Beyond the Edge - First ascent of Mount Everest

A movie which sheds light on the first ever successful expedition to the roof of the world -Mt. Everest back in 1953, by Sir Edmund Hillary and Tenzing Norgay.

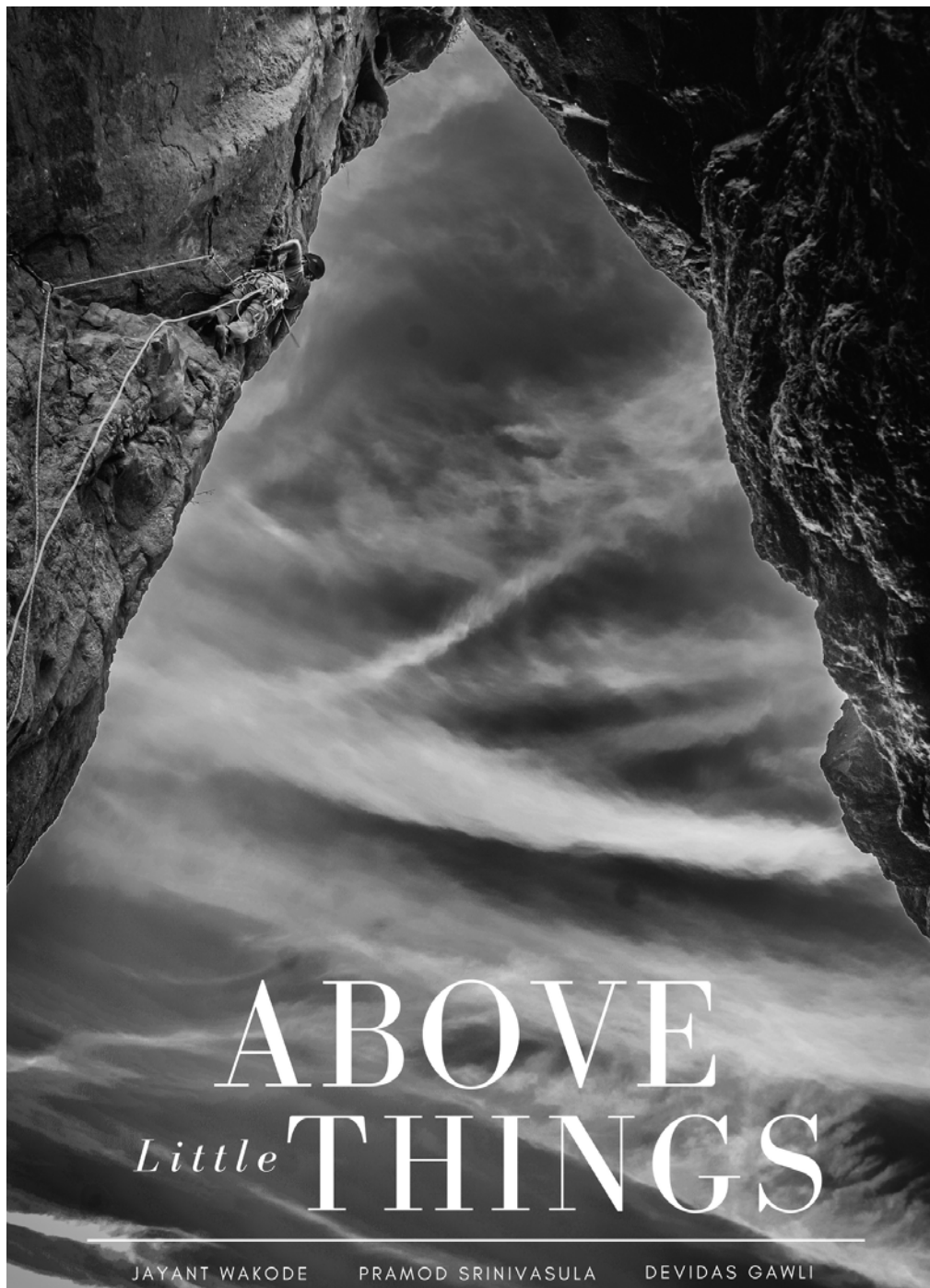
PERSONAL

Experiences of the Sport

The Above little things Project,
BMC at NIMAS, Dirang

Being a trekker right from my school days, I had a lot of chances to go on treks which lasted anywhere between 2-5 days initially. But, as I grew up I came to know about "High Altitudes", technically any place that is above 9000ft or above 3000m is known as high altitude. The idea of venturing into high altitudes is not something for everyone as it takes a toll on one's health if not prepared. Also, there are places in this zone where you would require technical skills to ascend on steep mountain faces which is a lot demanding.

So to learn technicalities and the courage to undertake such areas, I was able to make my way through the IIT Bombay's Climbing Community where I got in touch with seasoned rock climbers who had a sound idea of technicalities of the sport. Alongside I took the following project



“We Humans were not meant to sit in an office and work all day, We were meant to run on Rocks and Hunt Saber-toothed Cats”

- Unknown

Above Little Things Project

A P-Zero project in lines with rock climbers capturing the essence of climbing”.

At the beginning of the Human Civilization our primary purpose of existence on this planet was to survive. That was the only way to live. Even though it was extremely hard we just went with it. Then we had people in heavy armors and swords going to far distances to fight others for survival and capture their lands and expand their Civilization.

But in the last 100 odd years because of technological advancements our lives have become a lot simpler and efficient. All we need to do now is simply tap on our phone and food will be delivered right at our doorsteps. This is how easy it is now. On the other hand we complain about little things in life such as getting stuck in traffic, finances, our bosses, people we don't like, clothes which we don't look good in etc.



Image: Imrong, a climber from the project watching over a climb

This entire concept of little things was put forth by one of the experienced climbers on the team, **Jayant Wakode** a student of Aerospace Engineering here at IIT Bombay. Where he believed our everyday problems are nothing in front of the struggle during each climb on the rock just to survive.

But during climbing a rock this very instinct of Survival comes out of us. As every second on the rock we are literally trying to survive because one small mistake can lead to our death.

This sport of dealing with your Mortality which is “Big” up so close and constantly, gives you a whole new perspective on your life, where you realize that in front of an inevitability as death, all our day to day problems are actually “little” .

Also, there was this constant question “Why do we Climb?” . But it is interesting to know that we all have our reasons, but one commonality is we all believe is experiencing a higher form of living. Because until you have lived with your mortality hanging on thread, and pushed yourself to such a limit, when you have risked it all, everything tastes better, the water tastes sweeter, and the air feels glorious, you feel more accomplished, and it makes you appreciate this very present moment of your life.



Image: NIMAS's Ice wall at 17,000 ft. during the course, **Credits:** Nikhil Fernandes

Basic Mountaineering Course at NIMAS, Dirang

The next step to take my technical skills further and for the same I went through the Basic Mountaineering Course at Dirang in Arunachal Pradesh. It is one of the first five mountaineering institutes run by the Govt. of India and the newest of all serving all the adventure sports in land, water and air.

It is a course designed for the people who want to take their love for the outdoors to the next level, for which the an absolute essential.

It's a comprehensive first-look at techniques that go into turning adventure enthusiasts into serious mountain climbers. Guided by able instructors students get an opportunity to learn themselves in indispensable

NIMAS's mountaineering course is called as the toughest mountaineering course in asia, because of its severe training regimen and harsh weather conditions and terrain.

mountaineering methods such as bouldering, rappelling, jummaring, anchoring, belaying and camp-setting. The very terrain and altitude of Arunachal Pradesh makes this course challenging yet rewarding at the same time..

The course ran over a period of 28 days and was conducted under the supervision of Instructors from High Altitude Warfare School a.k.a HAWS.

At the end of the course I was well versed with the ideas and technicalities of Trekking, Rock, Ice Craft and survival. Furthermore, I recieved an "A" grade and got recommended for the Advance Mountaineering Course.



THE PROJECT'S

Origin

- Background based on BMC, NIMAS
- Who takes these courses?
- Adventure Education in India
- Importance of the Course
- How do these courses fit into their lives?
- Contents and Structures of BMC?
- Teaching and Training Methodologies
- What's available for learning currently?

“Adventure activities are always considered to be supplementary activities in our contemporary education system and maximum focus is upon making the students learn through theory”

**- Himendra Singh,
Principal, NIM, Uttarakashi.**

Adventure Education in India

The idea of adventure is still pretty much in its nascent stages in our country. It is still an alien concept to many. People in the country aren't just willing to accept the fact that there can be a life where you will have to risk your everything to achieve something, that even includes your own life. This makes the adventure education alienated to many.

It includes outdoor sports, excursions, explorations, events and even indoor activities. Because of its risky nature it is conducted mainly in the adventure institutes set up by the government of India across the northern belt of Himalaya. These Institutes in India offer a course in Adventure anywhere between 1 week to 1 month. The later being BMC and AMC.

MINDSET

The colonial mindset still exists and is visible in our country. People still think careers in Engineering, Medicine, Banking and Teaching are the way to go about to make a living. The reason being these fields are safe and secure. Hence the educational institutes catering to these people are the only ones who are able to sustain unlike the adventure institutes in the country.

Also, the few who send their wards to these courses such as parents are actually interested in Job Opportunities rather than skills that these courses can fetch for them. The 5 adventure institutes are as follows:



Jawahar Institute, Pahalgam,
Jammu and Kashmir



ABVIMAS, Manali,
Himachal Pradesh



NIM, Uttarakashi,
Uttarakhand



HMI, Darjeeling,
Uttarakhand



NIMAS, Dirang
Arunachal Pradesh

Who takes these courses?

The following are a list of people who usually enroll into these adventure courses amongst these 5 Institutes:

- **Adventure Enthusiasts**
Those who are looking to expand their horizons of adventure
- **Wilderness Explorers**
People who want to venture into the unknown to make new discoveries and findings both in nature and their field
- **People in Armed Forces**
The Indian army personnels are trained here before they are sent to protect the borders at high altitude
- **Entrepreneurs**
People who are currently running their own adventure organizations or looking forward to start a new one. In which a certificate in an adventure course adds to the credibility of that person or the organization that he or she is heading
- **Locals**
But perhaps, the most needy of the crowd are the locals. These are the very people from these hilly regions and are looking forward to make a living out of the adventure field by enrolling and learning the techniques from these courses. Which they can employ and improve their socio-economic lives by becoming a part of the adventure tourism ecosystem of the region.

Importance of the Course to the Locals

It has been already established that the lives in the Hills is filled with struggle on a daily basis. Adding to that is the lack of formalised education in these regions, that people are unable to move out of these places and earn a living in the world outside. That is one of the reason that people resort to tourism of the place to make a living.

Upon that the Adventure tourism is known to pay well over the traditional one as the earlier has a lot of risks involved with them. People get employed all the way from being a porter to a climbing or an expedition guide.

So as to minimize the risks of themselves and their clients, people enroll into these courses to equip themselves with the required skills to carry out safe adventure tourism.

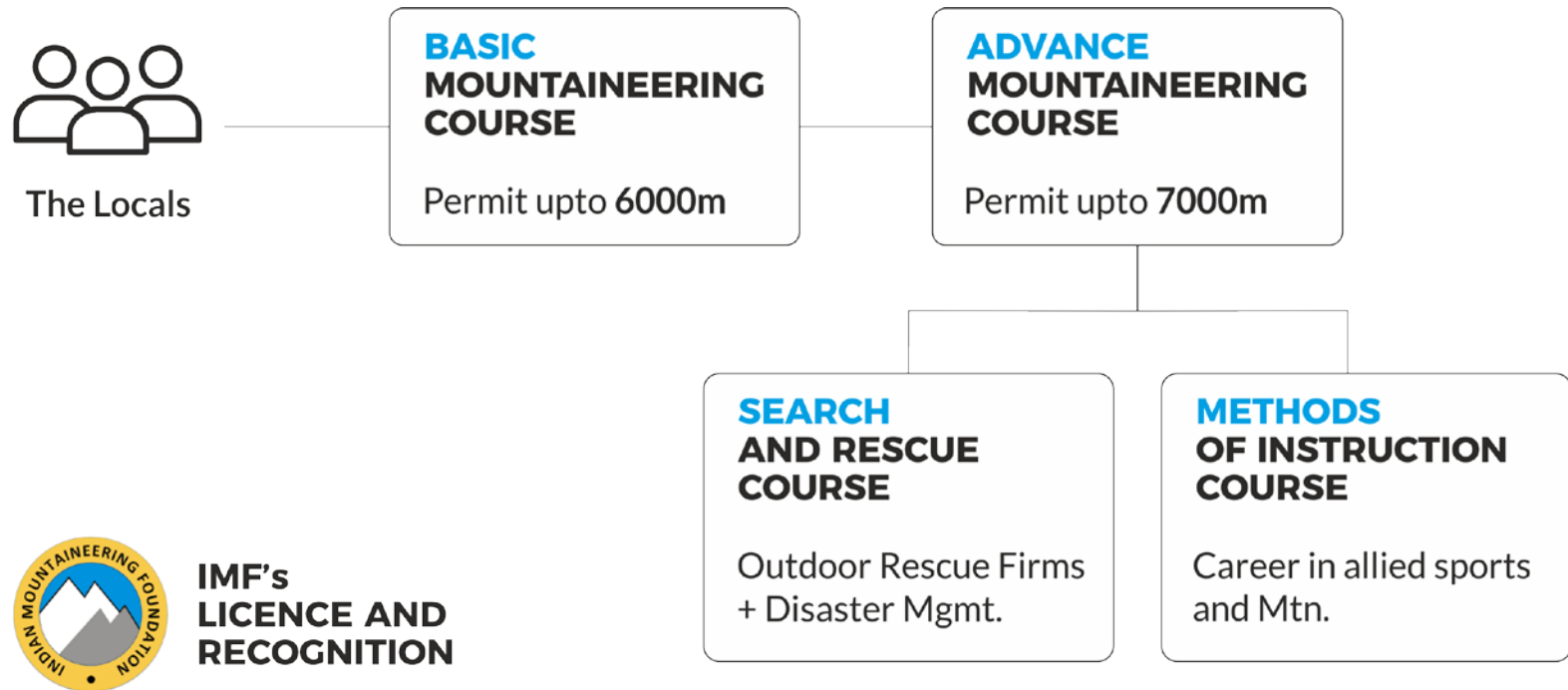
The main idea for them is to continuously progress towards a career that pays well.

CAREER OPTIONS INCLUDE

- **Regular Porters**
Rs. 5-15,000 per month
- **Trek Guides**
Rs. 500-1000 per day after doing BMC, Rs. 10-40,000 if he/ she possesses the knowledge of local landscape
- **Climbing Guides**
Rs. 3,000-5000 per day based on reputation and skill
- **Agency owners**
5-15 lacs per annum
- **Government Sponsored Candidates**
Becoming Evereststeers and earning anywhere between Rs. 15-60,000 per month

How do these courses fit into their lives?

The more certifications you get, the higher is your pay



Contents and Structure of BMC

The Basic Mountaineering Course is the foundation course in which men and women make their way into mountaineering.

The objectives of BMC are:

- To teach the basic techniques of movement on rock, snow and ice.
- Theoretical and practical aspects of mountaineering and its allied subjects, like Map reading, Navigation, Weather, Medical, Mountain Hygiene etc.
- To inculcate the right attitude amongst the trainees enabling them to view mountaineering as an art and not just a physical or adventure activity.
- To motivate people from all walks of life to higher endeavor.
- To make available to the trainees, suitable and relevant literature and reading material on mountaineering.
- To teach them how to make themselves comfortable and manage their health in the mountain environment.
- To conservation of Himalayan environment.
- To toughen their bodies by increasing their resistance to cold, hunger and fatigue.

STRUCTURE OF BMC

- **Endurance**
Physical Conditioning for High Altitudes
- **Trekking**
80% of the mountaineering sport is trekking.
The idea is to conserve energy to the maximum
so it can be used in difficult sections of the climb.
- **Camping and Survival**
Learning to keep your baggage to a minimum and
surviving in the harsh conditions of Nature.
- **Rock Climbing**
Ascending steep rock faces using technical
equipment
- **Ice Craft**
Crossing Glaciers and allied areas.

CONTENTS OF BMC

- **Mountaineering Equipment**
Tents, Carry Mattress, Sleeping Bag, Down Jacket,
Rain Coat, Balaclava, Pocho, Hand Gloves, Snow
Goggles, Rock Hammer, Climbing Shoes, Seat
Harness, Pulley, Camming Devices, Jumars, Quick
Draws, Carabiners, Helmets, Harness, Shoes
- **Mountaineering Terminology**
- **Rope Work**
Rope Coiling, Knots, Tape Slings, Gri Gri, Aid
Climbing, Rapelling
- **Survival**
Glass, Mustin, Stove, Water Carrier
- **Rock Climbing**
Principles of Climbing, Safety and Anchor Bases
- **Ice Craft**
Anchoring Equipments, Avalanche Victim Detection



Image: 4-pt Ice Climbing test at Meerathang Glacier at 17,000ft.
above msl

- **High Altitude Medicine**
HAPE, HACE, Hypothermia
- **Mountain Manners**
- **Glacier and Avalanche Terminology**
- **Tests -Rock, Ice Climbing, Written**
- **Certification and Recommendation**



Image: The Instructors at NIMAS looks over the batch . BMC -17

Current Teaching and Training Methodology

The following is the current method of carried out at the 5 institutes:

TEACHING

- * Lectures + Live Demonstrations on all the techniques from Trekking, Rock Craft to Ice Craft
- * Student to Teacher Ratio is 1:10 on Average depending on Batch Size
- * Mode of Instruction -Hindi + English (Hindustani, in army terms)
- * Teachings both on and off the field in lecture halls at the base campus

EXPERIENTIAL LEARNING

- * Hands on Skill + Tactile use of Equipments

FORMAL TEACHINGS

- * Providing Inspiration through Documentary Films, Daily lectures on Mountain Medicine, Survival Techniques,

TRAINING METHODOLOGY

- * Intense, Extremely Disciplined, Fast Paced, Military Style, train as if you are going to war

What's available for learning currently?

Currently a ton of videos are available online but they lack credibility and lacks applied context, which creates a gap in knowledge which increases the risk involved in the sport.

Guide Books available in Library in a few institutes from Foreign Publications, designed to cater to the needs of Alpinists and Mountaineers of the West.

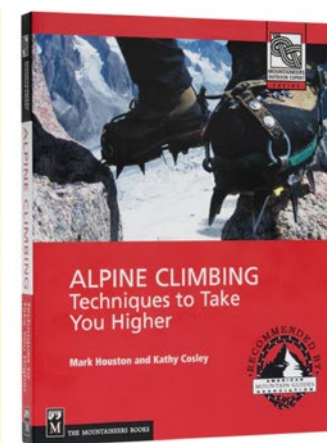
The credible sources include:



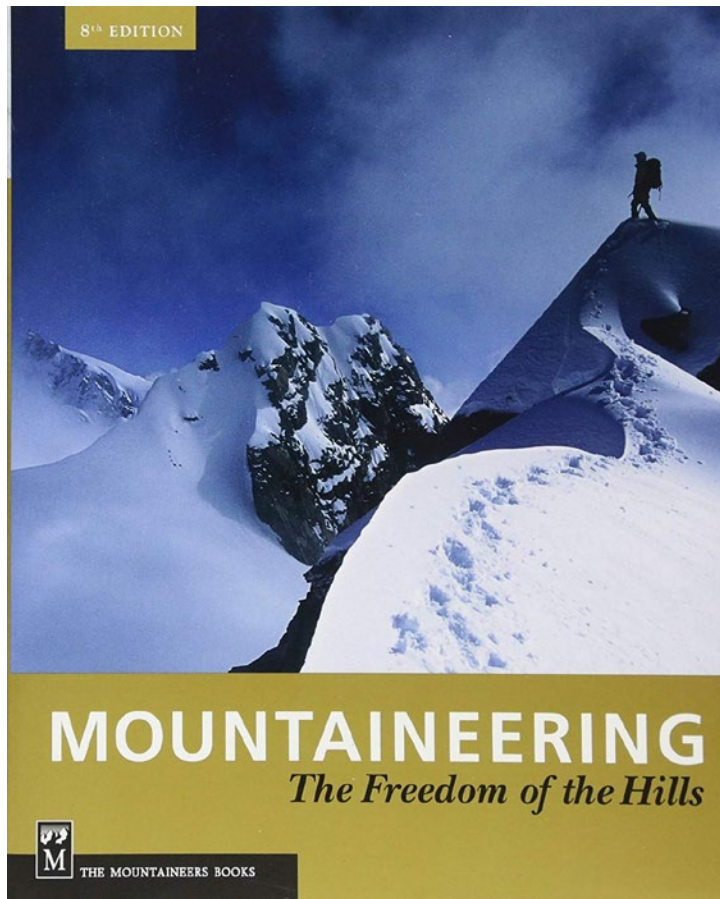
Mountaineering -Freedom of the Hills



UIAA Handbook



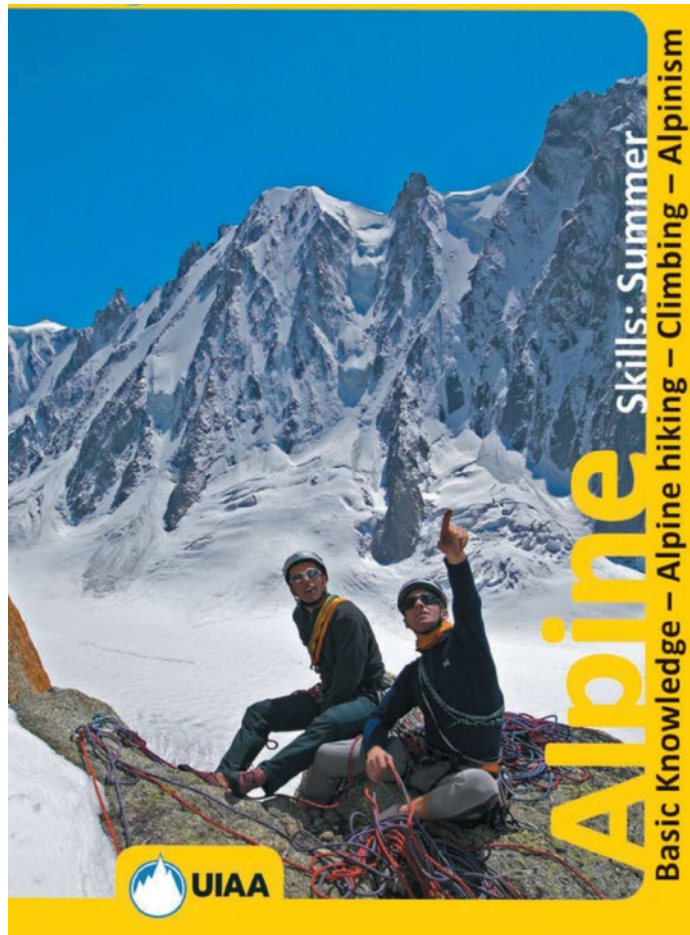
Mountaineers outdoor expert series



MOUNTAINEERING - FREEDOM OF THE HILLS

The book is called as the **Bible of mountaineering**. Starting out in the early 1960's, this book was put together by well over 40 of the most professional mountaineers of that time. It is a must for anyone who wants to become a mountaineer. It is rightly considered as the Bible of mountaineering as it contains all the information that you would ever want to know about mountain climbing.

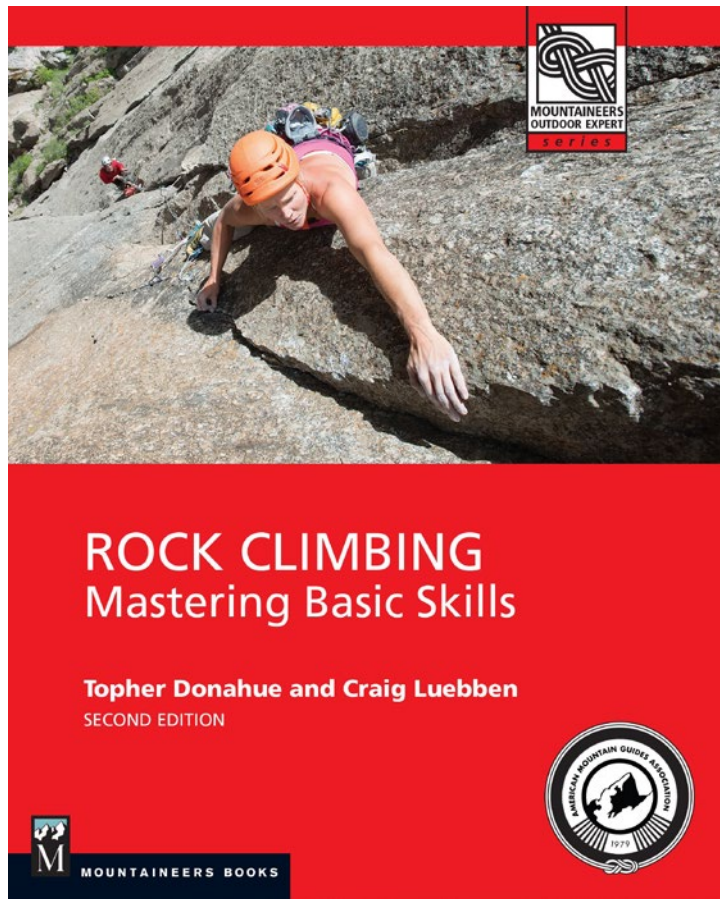
The book is especially easy to read for someone who is well educated, considering the subjects covered. The many illustrations are definitely a help and while outdoors experience is really the only way to learn mountaineering, the book is really well written. It includes sections on planning trips, expeditions, leadership, weather systems, geology, rock craft and ice craft and almost everything that is related to the sport.



UIAA -HANDBOOK

UIAA stands for Union Internationale des Associations d'Alpinisme a.k.a international mountain association. It is the principal body for the sport of mountaineering in world.

The handbook is a collaboration between UIAA and Petzl a renowned outdoor gear brand. Petzl's catalogues which are rich in illustrations have paved the way for knowledge for many mountaineers around the world. So, the idea of this book was to keep the text secondary and illustrations as first. The initial testing of the book was carried out in Nepal, where it was recieved very well from the climbing communities of the locals. This handbook is a compendium of the essential skills one must acquire in order to become a hiker, climber or mountaineering leader.



MOUNTAINEERS OUTDOOR EXPERT SERIES

Written by longtime guides and climbing instructors certified by the American Mountain Guide Association (AMGA). The mountaineers outdoor expert series is a set of guides ranging anywhere from the basics of climbing to alpinism to search and rescue techniques. It teaches situational thinking and learning when coming to the subjects that these books try to touch.

This book is considered as a fantastic followup to the Freedom of the Hills which is known as the bible of mountaineering. For anyone who wants to build upon the basics of the techniques taught in the freedom of the hills then these set of books are the way to go for them.

**“There is no
Chalta Hai,
Dekh lenge
attitude in
Mountaineering”**

- Instructors
Mountaineering Institutes

THE

Problem at Hand

Consequences of not being able to learn
Asking around to learn?

We all humans have different speeds of learning. Since, there is no educational requirement or any other specifics than age and physical conditioning for enrolling into BMC. A lot of these people of people from various parts of the country gets into these courses. This **creates a series of learning difficulties** for people who didnt have access to formalised education. These people include:

- **Locals** such as Farmers and others who have a poor educational background
- People who didn't study in **English** Medium
- People who are **slow** at grasping things
- The ones **extremely new** to the Terrain in general
- People who are literate in their **own languages**
- People **who can't** read or write but can only speak their languages
- People for who **note making** becomes difficult

**“In the
Mountains
there are no
second chances
as the cost of
error is too high”**

Consequences of not being able to learn?

MOTIVATION DROPS

- The student starts to believe that maybe mountaineering isn't for him?
- I am not good as the others
- He begins to accept the reality, that he can never be as good as the others

CAREER GETS AFFECTED

- The Candidate is unable to Clear certification
- If in an organization he doesn't get promoted
- Thinks of switching to other carrier options

RISKS SAFETY

- The Candidate develops poor mental models of Techniques
- Risks safety of Himself and his entire crew

UNABLE TO CLEAR TESTS

- He /She tries to get into the course again and again
- Takes up debts for the same
- Doesn't get Licence or Recognition from IMF

“If you think people will explore on their own it will come up at a cost of poor mental models”

- Researcher

Nokia Research, Finland

**“Aaspaas mein
puchke bhi
seekh sakte
hain na?”**

**Well they have access to their
Instructors and team mates, right?**

Yes, they can but not without the following challenges:

- Not all Instructors are *approachable*
- The *power distance* is too high
- Candidates may be *looked down* upon
- The Course is *rushed* because of duration
- The *Cultural and Socio* differences creates a barrier in approaching Teammates
- All the guides available online and in the library *cater* to the english audience
- By the end of the day you are *exhausted*

**“पर क्या सामने वाला
एक दम सही है ?
क्या वह
इसके ज़िन्दगी की
ज़िम्मेदारी
ले सकता है?”**

The Idea of Proximate Literacy

By asking around technically they can learn anything, but takes a lot **LONGER** !

DESIGNING A --- Solution

- Design to what context?
- Leveraging Technology
- Observations gathered from these users
- Characteristic of a Good Solution

Design to what context?

What factors should I look into with respect to the user to provide them with the best education possible when coming to a dangerous activity as mountaineering

SOCIO ECONOMIC BACKGROUNDS

- * Where do these people **hail** from?
- * What is their **source** of livelihood? Is it farming, tourism, daily wage labourers etc.
- * Will the solution I design, **feasible** for them? Can they afford it, will they be able to retain it?

LEVELS OF LITERACY

- * **Textual Literacy**, can they make sense of simple lines of text?
- * **Numeric Literacy**, do they perform transactions through numbers so they can make sense of simple numericals?
- * **Digital Literacy**, do they have access to digital devices back home or at the institutes where they are trained at?

CONCEPTS AND MENTAL MODELS

- * What do they know from their **day to day** life?
- How do they perceive it, and **recollect** it?

STRUCTURED LEARNING

- * Did they have any kind of Formal Education?
- * How much of it was from Text?

UNSTRUCTURED LEARNING

- * How or what did they learn from their environment?
- * By looking, feeling, behaving, sound?

Leveraging Technology

Over the years the India has seen a huge leap in terms of technology, especially in the area of telecommunications i.e the smartphones. Nowadays, every other person has access to smartphones. Currently there are over 299.24 million smartphones in the country and is expected to grow to 442.5 million by 2021. **Source: statista.com**

ENTERTAINMENT ON THE MOVE

People especially the locals in the hilly regions are seen to be well versed with a smartphone, as they are constantly on the move. The smartphone becomes a device for their entertainment where ever they go. And they very often listen to regional songs or watch videos both online and offline.

SOCIAL MEDIA ADAPTATION

People are frequent users of facebook and whatsapp, on which they mainly stream videos, images and audio content. Text being the least of all. On whatsapp, the majority of them have developed a very own vocabulary and they use emojis, voice notes to communicate over typing the message out.

INFRASTRUCTURE AT THE BASE CAMPUS

Institutes like HMI, NIM, JIM, NIMAS and ABVIMAS have lecture halls or auditoriums established within them, which allows them to conduct lectures and present powerpoint presentations during the same.

INFRASTRUCTURE AT HIGH ALTITUDES

All these institutes except for NIMAS, have fully fledged working supply of electricity via generators when they move out to the higher camps for glacier training. Capable enough to charge smartphones and cameras.

So a solution which leverages this existence is desired.

Observations from the Users

90% of the candidates who comes into these courses are in possession of a smartphone of one kind or another.

PICTURES AND SOUND

They prefer to look at visuals, sounds over text and prefer to communicate in the same way.

DEVELOPED A VOCABULARY

Due to frequent usage of social media networks such as Facebook and Instagram. People are now able to comprehend and understand short lines of text, such as “Hello, good morning” , “If you like this message, forward it” etc.

A BIG NO TO LARGE AMMOUNTS OF TEXT

They simply turn a blind eye to large ammount of texts saying “arre itna kaun padega?” in an encounter with a lady called Bhoomi -a mother of two when I presented her with Freedom of the Hills Guide book. She enrolled in the course at NIMAS to become an Everesteer.

SOCIAL FEEDS POPULATED WITH VIDEOS

Which they would stream at base camps for their entertainment in the evenings.

MOST OF THE LOCALS NEVER WENT TO SCHOOL

Farming and tourism being a major profession in these places, the locals never had access to formal education. Even though if they did they find it mundane and boring.

THEY DON'T SPEAK A LOT

Most of the times they keep to themselves and their kind and often feel awkward talking to people other parts of the country.

Characteristics of a Good Solution

A good solution will be the one where the context of these locals and the kind of people who enroll into these course is taken into consideration. A good solution would include the following parameters:

1. ECONOMICALLY AND TECHNOLOGICALLY VIABLE

For both the students who enroll into the course and for the institutes as well.

2. PROVIDE CLEAR AND PROPER METAL MODELS

Understand the use of technicalities in the right context.

3. IMPROVE COMPETENCY

Being able to analyze and comprehend and act of what they learn

4. SHOULD ENHANCE THE INSTRUCTION NOT REPLACE THEM

Should act as a support structure for the Instructors than replacing them.

5. PROVIDE MULTI SENSORY LEARNING

Sight, sound, touch and Story telling.

SOLUTION'S

Possible Directions

- Video Tutorials
- Handbook
- Finalizing the idea

**“The Idea will
be to establish a
syntax that can
be expanded...”**

Video Tutorials

The Idea of creating video tutorials was the first as it enables a person to learn at his/ her own pace. Allowing him to go back and forth, to his heart's contents till he grabs the Idea entirely. The following will be the qualities of a desired instructional video:

- *Establish connection with the audience*
- *Short and Focussed*
- *Using short sentences and simple words*
- *Get the voice of an instructor*
- *Demands hands on skill*
- *Consistent*

Handbook

A handbook in lines with UIAA's standard which can be carried out to remote locations which can act as a life saving guide in the most harsh of conditions.

- *Containing Necessary Information derived from videos*
- *Can be carried when the expedition moves to higher altitudes*
- *Minimal use of text*
- *Emphasizing on Visual Literacy*
- *Helps in preparing for their final test*
- *Self Explanatory*

“Why Knots? Safety Knot... Bowline Knot... Clove Hitch...”

Finalizing the Idea

The three knots featured here are known as the most essential knots of mountaineering and are the ones asked during the test. Thus, it became a good way to start of the instructional videos.

After looking at BMC’s curriculum and time being the major constraints involved, the decision was to make up a set of instructional video’s on Rope Work.

Which would allow the candidates of the course to learn and understand about the knots, their importance and the context in which they should be used in.

So a total of 4 videos were planned:

Video 1: Introduction to Knot Education

Video 2: Safety knot

Video 3: Bowline Knot

Video 4: Clove Hitch

DESIGN OF _____

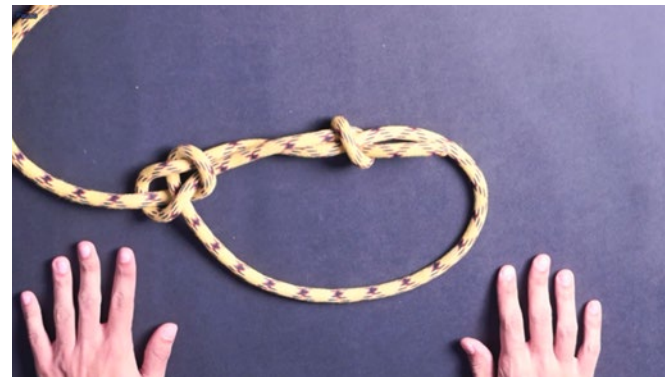
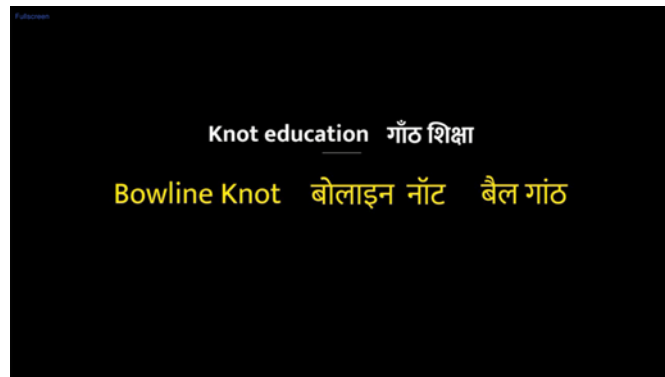
Final Solution

- Initial Prototype
- Shortcomings
- Video 1: Introduction to knots
- Video 2: Safety knot
- The way forward

Initial Prototype

A quick dirty prototype was built to test out the instruction videos inside the studio for Bowline

The screens from the video is as follows:

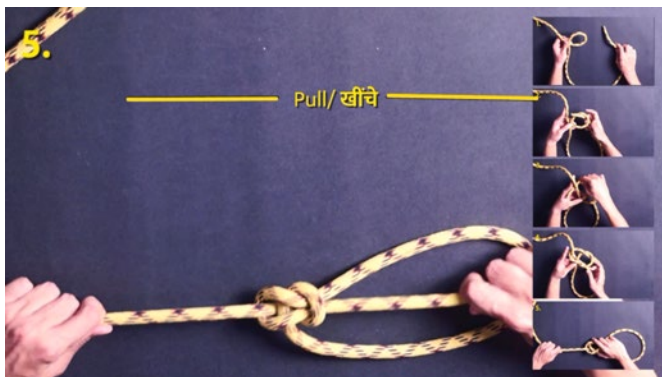
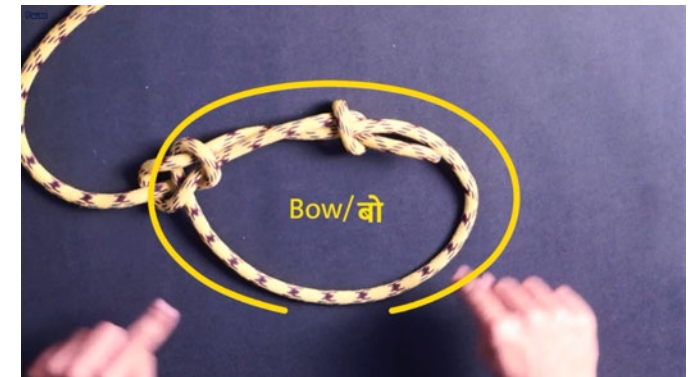


Knot education गाँठ शिक्षा

Why is it called a Bowline Knot ?
क्यों इसे बोलाइन नॉट कहा गया है ?

Knot education गाँठ शिक्षा

Bowline = Bow + line
बोलाइन = बो + लाइन



Shortcomings

The following short comings were noticed:

- * The core basics such as standing end /runners end wasnt explained.
- * The production quality was poor.
- * The structure isn't clear
- * The video lacked redundancy and checklist
- * There was no storytelling
- * There were no shots from the outdoor
- * There was no script to begin with

So keeping the above in mind, i started to develop a new set of videos which fully covered all the shortcomings which were observed in the above video.

Introduction to Knots -Initial Phases

A rope is considered to be a mountaineer's best friend. But one can use it to its maximum potential only when he has a good idea of how to tie knots with it. To portray this very point, the first video of the series introduce the knots and its uses while buiding uncertainty and analogies.

The screens from the videos are as follows:



In this video I portray myself as an instructor from NIMAS at Dirang. So, to establish a sense of credibility in the candidates watching it, that the video came from an Instructor.



Using of Dramatic Lighting to create emphasis

Narattion/Dialog

V1 -Climber Falls

V2-Climber falls but is safe

Toh aap kis tarah ke mountaineer bannana chahte hai, pehle waale ki tarah jo abhi hospital mein hain uss durghatna ke kaaran, ya dusre waale ki tarah jinki jaan jaate jaate bachi hai?

Inn dono climbers mein bass itna farak that ki pehle waale ne suraksha ko andekha kiya tha aur dusre ne nahi.

Parvatarohan, ek bahut hi jokhim bhara khel hai, Aur iss khel ko tabhi khela jaa sakta hai jab aap pure tarike se surakshit ho.

Dekha jaayein toh mountaineering mein suraksha ke kahin yantra hai, par sabse basic suraksha ka yantra hai ek rassi yaani rope.

Par ye rope bhi aapko tabhi surakshit rakhega , jab iska istemaal karte hue aap knots bana paayenge yaani gaant...

Bachpan se hi jaane anjaane mein aapne kahi baar knot ya gaante bandhi hogi jaise apne juton ki lace baandhte waqt, ya saman ko bandh kar le jaate waqt wagerah wagerah...

Waise, Knot bandhna ek yantriki kala hai, jisse aap kabi nahi bhul sakenge, bilkul cycle chalane ki tarah ya chalne ki tarah... haan par tabhi agar in cheezon ko baar baar dohrahte hai taaki bina dekhe hi aap iss cheez ko kar sakte hain...

jaise abhi agar mein aapko apne juton ki lace baandhne ke liye kahoon, toh aap bina dekhe bhi use baand payenge jisse aake jutein nahi khulenge aur aap girne se bachenge

Bilkul aise hi, mountaineering mein aapko girne se bachane ke liye kahi sari knots hai jinko seekhne par aap bhi surakshit tarike se kisi bhi jagah ki chadhai kar sakte hai, khadee dalan par utar sakte hain, lambai kam hone par rassi jod sakte hain aadi.

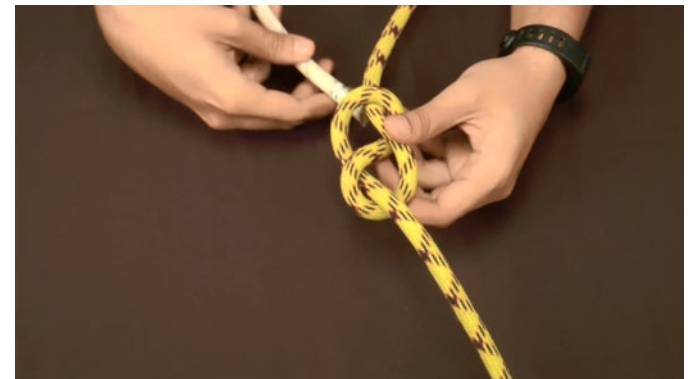
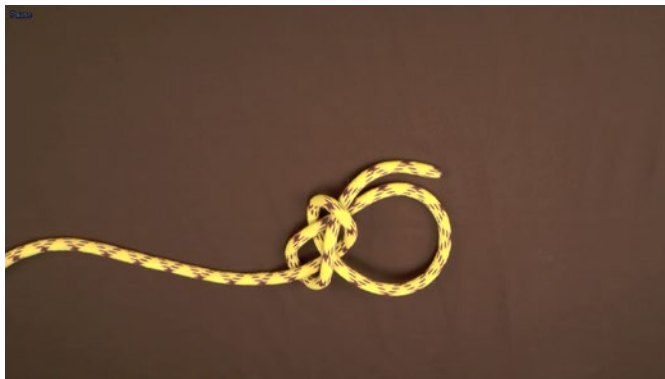
Toh hello doston, mein hoon hassan, ek senior instructor NIMAS Dirang se.

Aurhum yaani aap aur mein aane waale inn video mein aise hi kahin sare knots ke baarein mein seekhenge, jisse aap apne rope ka puri tarike se fayda utha payenge aur...

Haan aur ek baat, aap ek sacche mountaineer tabhi ban payenge jab aap apne aap aur aapke saathiyon ko surakshit rakhte hue, kathin se kathin paristhithiyon mein aage badhte jaayenge...

Toh phir aap taiyaar hain ek asli mountaineer banne ke liye? Agar aapka jawab hai haan !...
Toh chaliye shuru karte hain.....

Storyboarding



Left to Right :

Top Row: Displaying the equipments, a climber prepares, explaining a rope's end

Bottom Row: Preparing a Bowline, completed Bowline, figure of 8 on a bend

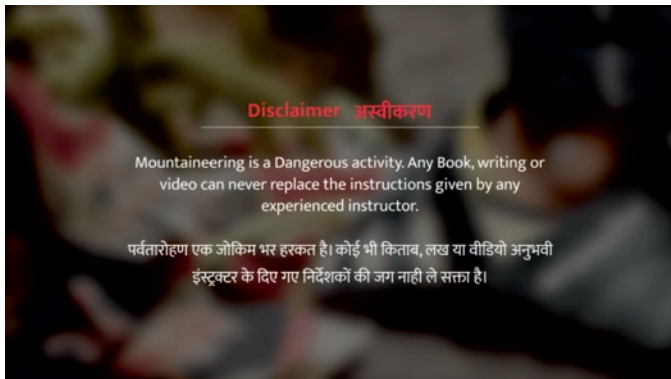


Left to Right :

Top Row: Comparing figure of 8 knots, Demonstrating a one handed bowline, Bowline tying while sitting

Bottom Row: Close up of Bowline, Top view of Bowline, Travelling to the Rock area

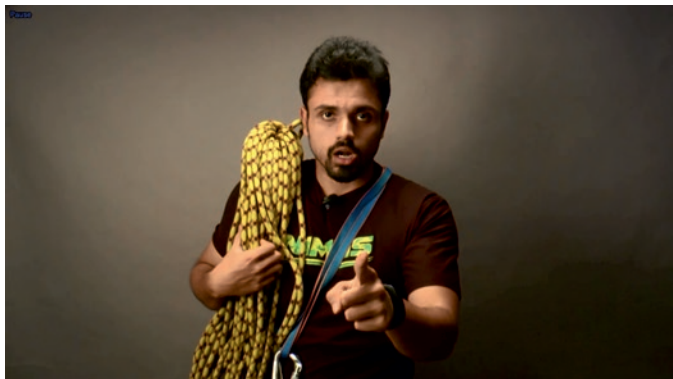
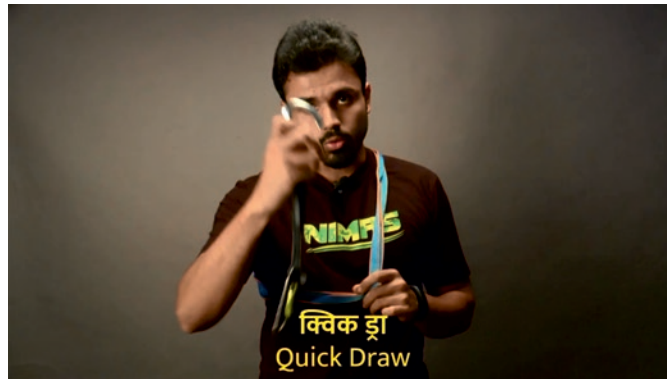
Video 1: Introduction to Knots



Left to Right :

Top Row: Disclaimer for the Video, a climber taking a fall, a climber surviving a fall

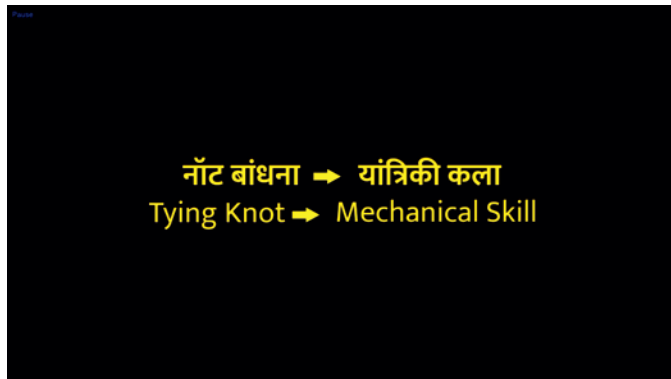
Bottom Row: The instructor questioning the viewer, the hospitalised climber, climber wearing protection



Left to Right :

Top Row: Instructor explains the safety tools, showing the quick draw, showing descenders and carabiners

Bottom Row: Questioning the audience, showing a knot, building analogies



Left to Right :

Top Row: Explaining the idea of a mechanical skill, a climber shows a stopper knot, asking user to practice

Bottom Row: A climber traverses, instructor introduces himself, instructor asks the viewer if he is ready to learn?

Breakdown of the Narration

FALL OF CLIMBERS

Establish interest and uncertainty

QUESTIONING THE VIEWERS

What's their take ?

MOUNTAINEERING AND SAFETY

The sport is dangerous...

INTRODUCTION TO THE SAFETY EQUIPMENTS

Importance of safety

BUILDING AN ANALOGY OF KNOTS

Show it's not entirely new

EMPHASIZING ON PRACTICE

Practice is the only way out

PERSONAL INTRODUCTION

Building up trust

SEEING IT AS A COLLECTIVE THING

Together we do this

Shortcomings from the video

INTRODUCTION OF THE INSTRUCTOR

It was decided that the introduction of the instructor should be placed at the beginning of the video so that it pulls in attentions to the viewers, right from the word go

SCRIPT BEING READ

The narration looked mechanical as if the instructor is reading from a script in front of the camera

Video 2: Safety Knot

Safety knot is the most basic knot of mountaineering and there is a very strong reason that it's called as a safety knot as it prevents the other knots from opening up.

Thus, it was very important to make a video on safety knot which demonstrates its importance and the conditions in which it is used



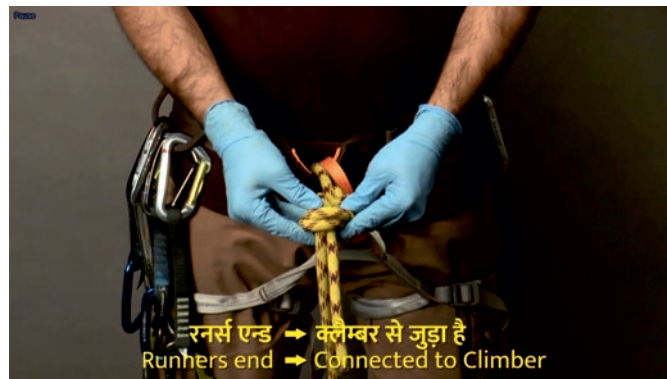
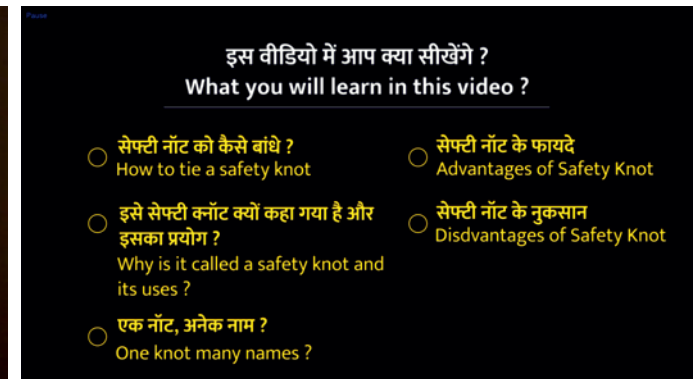
Left to Right :

Showing a faulty safety knot, questioning the users what went wrong?

The following points would be covered up:

- * *What you'll need to learn a safety knot?*
- * *What is standing and runner's end?*
- * *How to tie a safety knot?*
- * *Why is it called asafety knot and its uses?*
- * *One knot many names?*
- * *Advantages and Disadvantages of safety knot?*

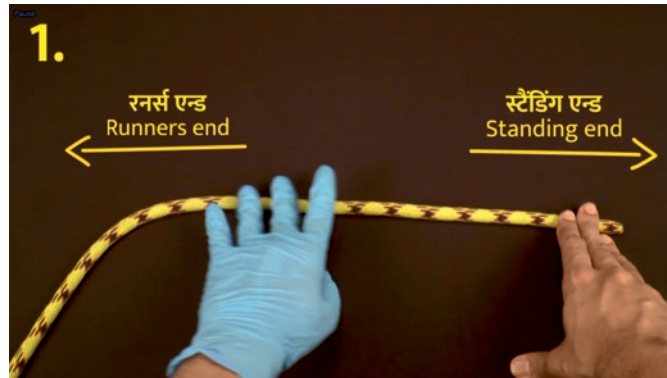




Left to Right :

Top Row: Showing the safety knot, the materials required, things that will be learnt in the video

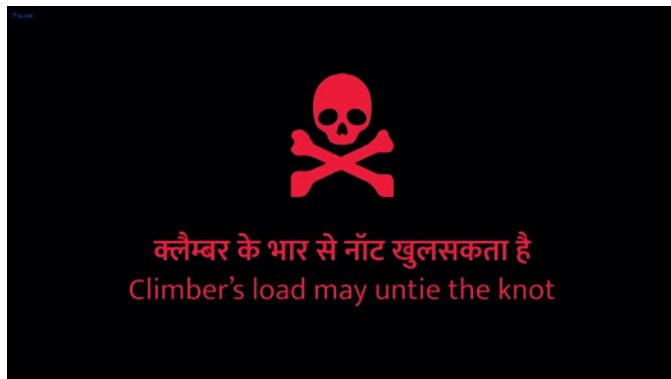
Bottom Row: Explaining a standing and runners end, the end in blue hand is that of the climber's end, redundancy of the concept of standing and runner's end



Left to Right :

Top Row: Portraying that there are 4 steps to a safety knot, first step of the knot, third step of the knot

Bottom Row: Explaining importance of safety knot, showing the figure of 8 tied into the harness, showing the opening of a knot under load



Left to Right :

Top Row: Caution screen, portraying the steps where the user makes a mistake, telling the wrong

Bottom Row: a properly tied safety knot, keeping the tail long, throwing in the flash back



Left to Right :

Top Row: Safety of a long tail, explaining the thumb knot, explaining overhand knot

Bottom Row: a view of the glacier, demonstrating the safety knot, the final checklist

Shortcomings from the video

ISSUES WITH CLOSURE

The black screens in the middle don't provide closure, instead they add to the confusion. Making the video feel like one long one without any chunks

CLASH BETWEEN HINDI AND ENGLISH TEXTS

Both the Hindi and English text prompts on screen being yellow constantly shouts for attention adding to the confusion of the user

PREASSUMPTIONS OF THE WORD SAFETY

At no point in the video the word safety has been explained i.e preassumptions were made that the user would totally understand the word safety

UNNECESSARY TO SHOW STEPS FOR A SIMPLE THING

It was observed that steps are only needed at complex points and not everywhere

MECHANICAL "TING"

The ting inserted to create attention was too mechanical to begin with

DOESN'T SHOW THE FIGURE OF 8

It was desirable for the instructor to show the weaving of a figure of 8 knot

DISTRACTIONS WITH THE WARNINGS

The blinking dot in the warning symbol creates a distraction

LOST CONNECTION OF THE FALL

Bringing the flashback of the fall in the middle doesn't make sense as it lost the connection

CLARITY FOR THE TEXT ON SCREEN

A gradient is desired beneath the text prompts to increase contrast

The way forward

At the time when this report is being compiled, still there are two videos remaining in the series which are some of the most complex knots namely Bowline and Figure of 8. While keeping the above shortcomings in mind.

To portray the instructions of analogy, initially clove hitch was picked up, but because of time constraints the decision has yet to be made between the clove hitch or the figure of 8 knot.

Also, since we are reaching the end of the project time it was decided that my project will be extended to DRS i.e Design Research Seminar here at IDC School of Design, where I will be allowed to go to the remote villages of the mountaineous regions and test these videos out.

THE

Conclusion

It's an iterative process, where you have to balance your decisions with time and constraints with "First principles"

Right from the moment I chose this topic, I knew it wasn't going to be easy where I'm trying to make an intervention in a system at a component level which has been there for over 60yrs. That being said it is our duty as a designer to keep challenging the status quo and strive for a better tomorrow.

The entire design process had many ups and downs from the initial prototype till the latest video on safety knot. But, I always viewed them from the perspectives of mountains, where an Up is a Down and a Down is an Up, it all depends on which side you are looking at it from !

The biggest learning would be the point that we as designers should look at sticking to the fundamentals which are termed as first principles, i.e it is the simplest of things which has the biggest of impact.

At no point, I would claim what I did was revolutionary or ground breaking, but I will always say it's a start. Where I will believe that mountaineering and climbing touches people's life in the way in which it did for me.

In a country where people struggle to get two meals a day, it is a luxury to be even thinking of adventure in the first place. That being said we should never shy away from the privileges that we have but instead utilize them to empathize for the less fortunate and make a better tomorrow for them.

I would like to conclude with a thoughtful quote by anindya mukherjee an alpinist from 20 yrs who says:

"Climbing makes you a better human and, better humans make better societies"

THE _____ Acknowledgments

Having a Gratitude for those
who stood by me during the
entire duration

I would like to thank **Prof. Mandar Rane** -my guide
who believed in my Idea of the project to begin with and
whose Visual Design and communication theory modules
in the first year brought my attention to one's duty as a
communication designer.

Next will be **Prof. Raja Mohanty** for constantly pushing
me in my first jury to look at the bigger picture of
climbing which allowed me to dig deeper into the context
of the localites to whom this project is for.

Towards the end, I would like to specially thank all my
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Imrong Longkumer for constantly supporting my
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NIMAS Dirang.

Finally, I would like to thank **my parents** who introduced
me to the mountains in the first place and always
believed in all the causes that I ever stood for.

