



Mahatma Gandhi Mission's College  
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# DESIGN & FABRICATION OF MONOWHEEL

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## Introduction

Monowheel, one-wheeled motorized vehicle. Unlike a unicycle, however, the driver of a Monowheel actually sits inside, or sometimes next to the wheel.

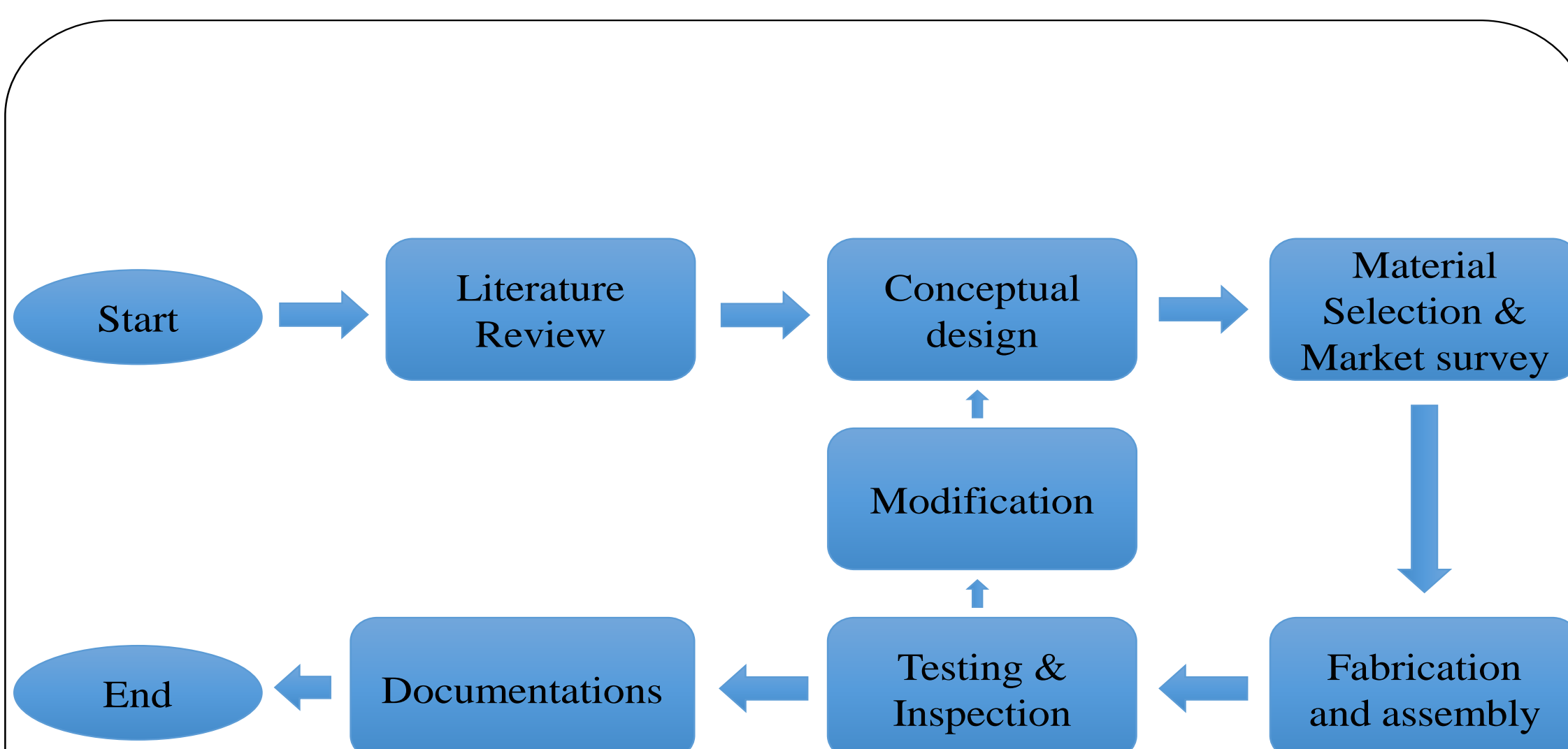
A Monowheel is different from a unicycle because the rider sits inside the wheel's circumference, rather than on top of it or outside it. Usually, a Monowheel will have a circle-shaped frame with a moving track on the very outside, often made of rubber. Think of the track as a giant tire that surrounds the Monowheel, it's what's responsible for moving the vehicle forward.

Monowheels are now a days used for fun purpose due to some limitation that explained later are not commercially used. Monowheels are either engine operated or Pedal Operated.

## Project Objectives

- Fabricating the structure of the Monowheel to achieve more stability or balancing.
- Implementation of an engine which will drive the Monowheel & also adding a mechanical braking system.
- Adding support to the Monowheel so that problem like 'Gerbiling' will not occur on applying brakes or accelerating.

## Methodology



## Results and Discussion

### Specification of Monowheel

S.No.	Vehicle specification	Target	Actual
1	Outer frame diameter	1524 mm	1524 mm
2	Inner frame diameter	1474 mm	1474 mm
3	Seat height	610 mm	711.2 mm
4	Handle height	762 mm	1016 mm
5	Brakes	Drum brake	Drum brake
6	Engine	110 cc petrol engine	102 cc petrol engine

### Overall performance

S.No.	Aspect	Value
1	Total mass	80 kg (approx.)
2	Maximum Speed	20 km/h (safe)
3	RPM of Drive (No load)	720
4	RPM of Drive (With load)	418
5	RPM of outer frame	70



## Conclusions

- The fabrication of Monowheel is completed with great satisfaction.
- Our prime objective is to eliminate the problem of gerbiling and disbalancing which is partially completed

On keeping safety in mind we concluded that Monowheel can only be used for short distance and fun purpose only. Due to problem of balancing it can't be used commercially.

## References

- **DESIGNING THE MONOWHEEL VEHICLE**, Dan Botezatu, The 3rd International Conference on "Computational Mechanics and Virtual Engineering" COMEC 2009 , Brasov, Romania, 29 – 30 OCTOBER 2009
- **MONOWHEEL DYNAMICS**, Gheorghe DELIU, Mariana DELIU, International Conference on Economic Engineering and Manufacturing Systems, Brasov, Vol. 10, no. 3(27) 26 – 27 November 2009
- **THE PLANE MOTION OF MONOWHEEL VEHICLE**, Dan Botezatu, Recent, Vol. 15, no. 2(42), July 2014
- **FABRICATION OF MONO ROUE**, Maanyam. Sairam et al. Int. Journal of Engineering Research and Applications, ISSN: 2248-9622, Vol. 4, Issue 10(Part - 4), October 2014

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