DESIGNING ERGONOMICS WORKSTATION DIDACTIC SYSTEM WITH HUMAN-CENTERED DESIGN APPROACH

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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Education lacks a teaching method to fully explore ergonomics and its application in industry. Education lacks the tool to demonstrate ergonomics application in industry. There is a need to create a tool and update the curricula to be more applicative in its teaching method. In manufacturing, there is a lack of flexible system to fully implement lean manufacturing. There is a gap between customer demand and business capability to respond in a quick way.

Both education and manufacturing industries need a flexible workstation that can adapt to any process. For educational purpose the workstation acts as didactic system able to teach and demonstrate the current industry workflow and process. The concept of Ergonomics Workstation Didactic System is a modular workstation able to adapt to any process depend on the user needs. The workstation can benefit to both education and manufacturing industries. Education for ergonomics can benefit to be more applicative in its teaching method.Human-centered approach is used for the design process. The methodology to design is design thinking. Design thinking is different than scientific approach. Design thinking does not follow a linear approach to solve a problem but instead use divergent based thinking to explore ideas.

Keywords: Design Thinking, Ergonomics, Workstation, Virtual Prototyping, Empathy in design, Pipe and joint.

DEDICATION

I dedicate this thesis for my family and for all those who gave me endless support.

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