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Correlation Analysis between Mechanical Structure Design and Manufacturing Technology of NC Machine Tools

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Abstract: ***In the course of rapid economic development of modern society, our manufacturing industry has been given a chance to develop rapidly, which is closely related to the acceleration of the industrialization process and the support of science and technology. During the development of Chinese manufacturing industry, numerical control machine tool mechanical structure design and manufacturing technology as the key technology, to a great extent supported and promoted the progress and development of our country manufacturing industry. This article mainly based on the practice content, the analysis of the numerical control machine tool mechanical structure design and manufacturing technology correlation, expect for our country numerical control machine tool and even manufacturing industry development to provide important support.***

Keywords: CNC machine tool; Mechanical structure design; Manufacturing technology; Correlation analysi.

1. INTRODUCTION

In recent years, along with the high speed development of modernization economy, has a broad development prospect of new automation machine tools, namely numerical control machine tools, in our country industrial production in the field of industrial production has got a good application and development, it as a high electromechanical integration product, the scientific rationality of the product structure continuously promotes, performance, precision and efficiency also continues to rise, CNC machine parts processing quality, precision and other requirements have also been greatly improved. In order to meet the needs of the operation and development of CNC machine tools, we should do a good job in the processing and manufacturing of the corresponding mechanical products and rationalize the use of relevant technologies, which is of great practical value.

2. BRIEFLY INTRODUCES THE NUMERICAL CONTROL MACHINE TOOL MECHANICAL STRUCTURE DESIGN

2.1 Importance discussion

Numerical control machine tool is the result of the continuous development of automation application technology. If it is applied to the actual production process, it can better improve the production efficiency and guarantee the quality of production. For the product of CNC machine tool, it is the key to improve the performance and value of the product to do a good job of its corresponding structural design. CNC machine tool mechanical structure is more complex, but also has a greater impact on product performance, in order to meet the needs of the development of domestic production operations, improve the scientific rationality of CNC machine tool mechanical structure design, has great practical value. In the process of structural design of CNC machine tools, clear structural design and key points, is to smoothly and effectively carry out the foundation of structural design work, in terms of CNC machine tools products, the most important part of the structure is three aspects of the content: spindle components, transmission structure and support structure. So that in the CNC machine tool mechanical structure design link, do the above three aspects of the design content, is to ensure the focus of structural design.

2.2 Analysis of development status

How to strengthen and improve the stability, geometric accuracy and seismic resistance of CNC machine tools is an important component of the mechanical structure design objectives of CNC machine tools. In the case of achieving this design objective, the performance of CNC machine tools products and the overall reliability of the product will have a greater guarantee. During the whole process of mechanical structure design, designers first need to be aware of the role and importance of each structural part, and carry out the corresponding design work on

the basis of it. For example, for CNC machine tool products, the spindle component is the key content of mechanical structure, which largely determines the speed of the product. Science and technology continue in modern times. Under the development situation, the type of CNC machine tool mechanical structure is also more and more rich and various, as far as the spindle component is concerned, combining with the mechanical production situation of our domestic and foreign recent years, it has a strong comprehensive, application speed is relatively fast, high speed antenna type mixed ceramic Angle contact bearing, on CNC machine tool machinery products has a better application and development space, therefore, The mechanical mechanism design of CNC machine tools has also changed correspondingly. For CNC machine tool products as a whole, each component has a close relationship with each other. In the case of mechanical structure design, it is necessary to formulate a scientific and reasonable structure design based on the needs of other components. For example, in order to ensure that the supporting parts and transmission parts are always in an accurate state, designers need to choose high-precision bearing structure design as far as possible. Meet the requirements of supporting parts and transmission parts.

3. THE PRESENT SITUATION OF MANUFACTURING TECHNOLOGY DEVELOPMENT IS SUMMARIZED BRIEFLY

In the situation of the compound development of CNC machine tools, the manufacturing technology of our country has made a good progress and development. In the case of composite machine tools to appear and widely used, the relevant personnel can complete the product design, processing to the final product link on a machine tool, greatly improve the efficiency and quality of product manufacturing. In this case, not only enrich the content of manufacturing technology, but also better improve the original manufacturing process, promote the emergence of composite process flow. In such a production operation, during the whole product processing process can minimize the probability of loading and unloading problems, save the time needed to replace the product replacement, through the automatic adjustment function of compound machine tool set, replace the original manual operation adjustment mode, avoid manual operation error, but also save human resources, improve the processing time. In such a new product processing mode, the product processing cycle can be reduced relatively, and the product production efficiency has been better improved. Compared with the traditional product manufacturing and processing mode, this compound product processing mode can promote the appearance of modular processing mode, which greatly reduces the difficulty of product processing and improves the processing efficiency. Ensure the quality of processing.

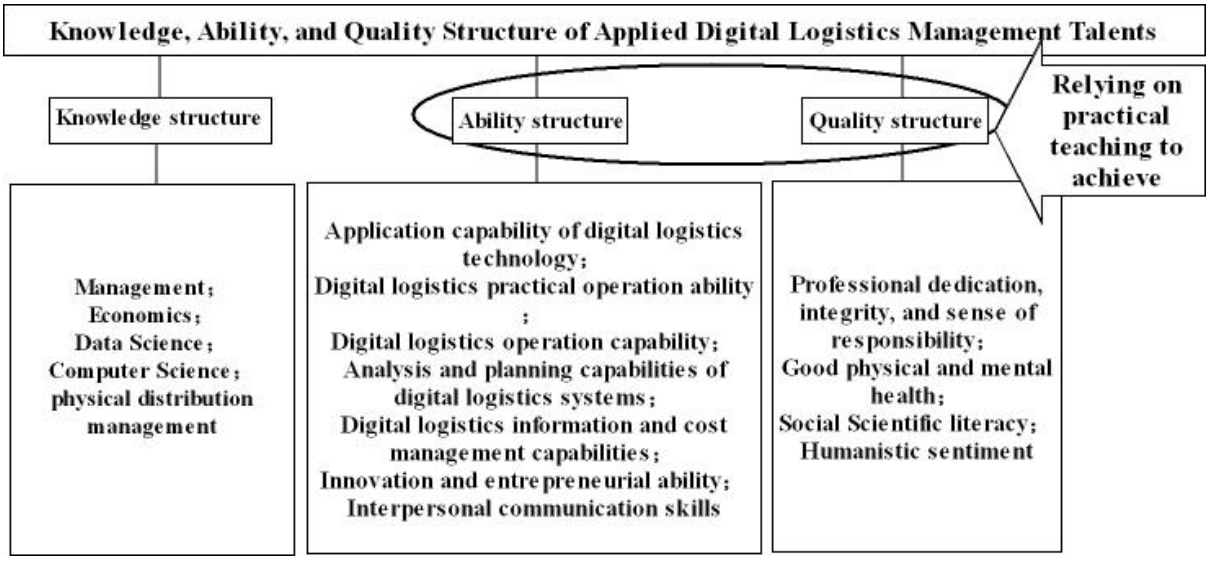

Figure 1: Practical Teaching Objective System for Applied Digital Logistics Management Talents

The practical teaching system is an important carrier for improving students' abilities and literacy, and is an organic whole composed of the objectives, content, students, teachers, evaluation, and other elements of practical teaching. Therefore, the construction of the digital technology logistics management practical teaching system should be centered on the cultivation of digital technology capabilities, guided by the goals of digital logistics practical teaching, focused on the optimization of digital logistics practical teaching content, and focused on the reform of digital logistics management practical teaching methods. Innovative practical teaching models should be

established, the practical teaching management system should be streamlined, and a scientific digital logistics management practical teaching guarantee system and evaluation system should be established[2].

4. CNC MACHINE TOOL MECHANICAL STRUCTURE DESIGN AND MANUFACTURING TECHNOLOGY CORRELATION SUMMARY

In actual production and life, CNC machine tool mechanical structure design and manufacturing technology. The two are in a complementary state, the development of CNC machine tool mechanical structure design, can not be separated from the support of manufacturing technology, the same development of manufacturing technology, and CNC machine tool mechanical structure design is closely related.

Table 1: G-ve enteric bacteria isolated from different investigated sources (water, calves, goats and human)

Sample origin	Water (46)		Calves (58)		Goats (28)		Human (36)		Total isolates	
Isolates	No	%	No	%	No	%	No	%	No	%
E.coli	10	21.7	13	22.4	7	25.0	6	16.7	36	33.97
Salmonella Species	5	10.9	11	18.9	5	17.9	5	13.9	26	24.53
A.hydro-phila	9	19.6	7	12.1	2	7.1	5	13.9	23	21.69
Pseudomonas aerogenosa	8	17.4	6	10.3	3	10.7	4	11.1	21	19.81
Total	32	69.6	37	63.8	17	60.7	20	55.6	106	100

The analysis of the present situation of numerical control machine tool development can be known, during the process of the entire industry domain operation development, its main challenge content lies in the numerical control machine tool domestic market share is not high, this phenomenon appears, largely with our country numerical control machine tool product quality situation needs to be further strengthened to promote the relevant. As a class of precision, quality level requirements of higher products, CNC machine parts, production and processing process put forward high quality requirements, the development of manufacturing technology, in the impact of CNC machine parts quality, CNC machine product processing and manufacturing process at the same time, the overall quality of CNC machine tools has a greater impact. For example, during the process of structural design of CNC machine tool supporting parts, structural design personnel mainly consider how to strengthen and enhance the stability of supporting parts, supporting ability, structural design content is limited by manufacturing technology, so that structural design personnel can not follow one's incline to carry out structural design, it must be in the existing manufacturing technology level, formulate the corresponding structural design scheme, For example, the artificial granite material is used as the supporting parts of CNC machine tools to ensure the dimensional stability of the parts and meet the quality requirements of the supporting parts of CNC machine tools based on the corrosion resistance of the material itself.

Table 2: Serological identification of E.coli isolates (36)

E.coli serogroup	No
O119	6
O111	4
O55	4
O86	3
unidentified	19
Total	36

By analyzing the current situation of our manufacturing technology development, we can know that the manufacturing industry as a support industry of national economy has a great influence on the social and economic development during the whole process of our national economy development. In order to meet the development needs of manufacturing industry, it is very important to improve the overall scientific level of manufacturing technology and enhance the efficiency and quality of manufacturing activities. Automation based on CNC machine tools. it has been better application and development in the manufacturing industry domain in our country, will actually be applied in the manufacturing industry process period the situation, manufacturing mode, manufacturing technology process, etc will be affected by the development of numerical control machine tools, and then appear some changes, towards the better and further development of the road. CNC machine tool structure design as the key to the development of CNC machine tools, to a large extent determines the value of CNC machine tool products themselves, determines the development of CNC machine tool industry, and then will have a greater impact on the application and development of manufacturing technology. For example, in the case of the emergence and application of complex CNC machine tools, relevant manufacturing technologies have

emerged to meet the needs of modular production and operation mode, and at the same time promote the development of the manufacturing industry.

Table 1: The way to improve professional teachers' ideological and political ability "four teachers in one"

Teachers' ideological and political ability "four teachers integration" to improve the platform features		
Basis: clear role positioning and realize multi-level and multi-dimensional collaboration		Fundamentals: firm ideals and beliefs, and consensus on the direction of ambitious goals
Guarantee: carry forward noble teachers' ethics, promote mutual humility and trust, establish morality and cultivate people		Key: master excellent knowledge and improve the ability of mutual education
Improvement measures	Professional full-time backbone teachers, young teachers, full-time ideological and political teachers, and off-campus tutors grow together	
1	Deepen the identification of ideological and political connotation of the curriculum, and construct the ideological and political teaching system	(1) Strengthen the education of national sentiment: professional course teachers should firmly adhere to the "four self-confidence", adhere to the goal of teaching for the country, shoulder the responsibility of establishing morality and cultivating people, actively spread the national theme, and transmit the positive energy of socialism; (2) Strengthen vocational standard education: love and work hard, prepare each class carefully, and devote to teaching work with full passion; (3) Strengthen the education of academic norms: we should abide by academic norms, adhere to academic ethics, study rigorously, teach meticulously, and pursue excellence; (4) Do a good job in thanksgiving education: care for students and provide assistance to students with difficulties in study and life.
2	Strengthen information literacy training and popularize the application of intelligent teaching mode	(1) Excellent teachers carry out demonstration classes and open classes; (2) Help young teachers and apply them in teaching; (3) Cooperate with universities and enterprises, and hire technical experts outside the university to give professional lectures; (4) Lead the team to participate in the school-level and provincial-level teacher teaching ability competition to further exercise and improve the level of informatization;
3	Build a multi-level and multi-dimensional cooperation platform to improve the comprehensive social service capacity.	(1) School-enterprise cooperation: set up doctoral innovation workstation, take technical service as the center, point to area, cultivate teamwork spirit, accumulate work cases, enrich ideological and political materials, and improve teachers' ideological and political ability; (2) School-government cooperation: undertake to complete the provincial and municipal training projects to improve the comprehensive service ability of teachers;
4	Optimize the external teacher team and realize the coordinated promotion of ideological and political work inside and outside the school	(1) Raise the threshold for teachers to be hired outside school and improve the quality of teachers to be hired outside school; (2) Set up a one-to-one mutual aid group of post-based modular professional capabilities inside and outside the school, and establish an evaluation and incentive mechanism; (3) Schools and enterprises jointly develop ideological and political teaching cases and participate in the construction of ideological and political textbooks;
5	Improve their professional level and innovate the teaching methods of courses	(1) Vigorously improve the training of teachers' ideological and political teaching ability and innovate teaching methods; (2) Set up teaching methods, cases, classes and curriculum activities, and set up corresponding incentive mechanisms;

6	Deepen the effectiveness of ideological and political training and enhance the ability of ideological and political teaching	(1) Summarize the ideological and political teaching team by stages, such as submitting training summary, report and evaluation; (2) Summarize and promote ideological and political teaching cases. Include the assessment of teachers' ideological and political ability into the year-end assessment system, and increase the proportion of ideological and political ability improvement in the year-end assessment.
Change ideas, seek foreign aid, enrich teaching methods, and increase ability		

5. CONCLUSION

This article mainly to the numerical control machine tool structure design importance and development status quo, manufacturing technology development status quo related contents have begun the corresponding analysis, through the analysis of this article discussed, during the process of our modern society continuous development, the numerical control machine tool industry movement development situation has been much attention, to better meet our country numerical control machine tool and manufacturing industry development needs, Strengthening the mutual support effect of NC machine tool structure design and manufacturing technology is an important way to promote the scientific rationality of NC structure mechanical structure design and improve the overall level of manufacturing technology. Under the condition of strengthening manufacturing technology, the quality of parts and other products can be guaranteed and improved, which provides a more powerful guarantee for NC machine tool product processing and manufacturing. It improves the overall quality of CNC machine tools and contributes to the development of modern society and economy.

It is abundantly obvious from the research discussed above and the analysis of the findings that motivation is a key factor in determining personal success and achievement. People are motivated to take action and make an effort in order to continue pursuing their goals, overcome obstacles, and succeed by an inherent force. Individual behaviour and outcomes are influenced by both intrinsic and extrinsic motivation, although intrinsic motivation is more enduring and significant. Based on the findings of this study, we propose that physical educators can effectively use the Situational Motivation Scale (SIMS) to support students in maintaining motivation, overcoming challenges, and achieving their learning objectives.

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