

Construction of skilled personnel team system for intelligent manufacturing in aviation manufacturing enterprises

Xiangna Li, Jun Dai, Chuan Zhang, Hao Wang

AVIC Chengdu Aircraft Industrial (Group) Co.Ltd. Chengdu 610073, China.

Abstract

It is the key factor for the successful application of Intelligent Manufacturing in the aviation manufacturing industry to build a mature skilled personnel team that adapts to the trend of intelligent manufacturing and is knowledge-based and compound. Based on the analysis of the demand of intelligent manufacturing for skilled personnel, this paper puts forward the general idea of building the skilled personnel team system of aviation manufacturing enterprises under the trend of intelligent manufacturing, constructs the competency model of skilled personnel, builds the training mode of new entry skilled personnel, and combines the implementation guarantee system of the skilled personnel team. For China's aviation manufacturing enterprises, it is oriented to intelligence It provides a new system and mode to build the system of manufacturing skilled talents, which has certain innovation and reference significance.

Keywords

Intelligent manufacturing Skilled talents Talent team building.

1. Introduction

After years of development, the domestic aviation manufacturing industry has made outstanding contributions to the development of the aviation industry in New China and has made remarkable achievements. With the rapid development of the times, the level of scientific research and production has been continuously improved, and the new generation of aviation structural components has been developing towards refinement, large-scale and complexity. With the continuous investment of new materials in aviation applications, traditional manufacturing methods have been unable to meet the increasingly high-end design requirements. At the same time, the State Council put forward the strategic plan of "Made in China 2025" in 2015. The development of manufacturing enterprises is more and more dependent on the level of intelligent manufacturing. However, the introduction of intelligent manufacturing equipment is only the upgrading of production equipment, rather than a change of production concept, which cannot give full play to the advantages of intelligent manufacturing. The main factor causing this phenomenon is the factor of skilled personnel, which is manifested in the following points^[1,2].

Firstly, the structure of skilled personnel is unreasonable, and there are few successors. The growth rate of skilled personnel and the characteristics of skilled personnel can not meet the actual requirements of the rapid development of intelligent manufacturing.

Secondly, the training mode of skilled talents cannot meet the needs of intelligent manufacturing. Through the investigation of the main factories in the industry, it is found that the current training mode of skilled talents is mainly carried out by the mode of "centralized training before enterprises → allocating specific posts → learning by teachers and apprentices apprentices → self-development". In this way, in the process of growth, employees basically rely on personal understanding, personal ability and personal self-consciousness to learn and grow naturally, and the training cycle is long, the growth adaptability is poor, the innovation

ability is weak, and the comprehensive quality is poor, which cannot meet the use of the scale of skilled talents required by intelligent manufacturing.

Finally, the personality characteristics of young employees in the new era have brought new problems to the construction of professional and technical personnel. Young people in the new era grow up in a superior environment, the spirit of hard work of young professionals weakened.

Therefore, only by building a talent team system for intelligent manufacturing within the enterprise and establishing a talent team suitable for intelligent manufacturing, can we give full play to the characteristics of high intelligence and high informatization of flexible production lines, effectively improve production efficiency, and thus gain the opportunity in the new round of industrial revolution led by intelligent manufacturing. Based on the construction of skilled personnel in an aviation structural component manufacturing plant of a main engine factory, this paper discusses in detail the training system of skilled personnel for intelligent manufacturing from the current situation of skilled personnel in enterprises, new ideas for training skilled personnel and the construction of security system, in order to provide reference for the construction of skilled personnel in the industry.

2. Analysis of Skilled Personnel Construction in Aviation Manufacturing Enterprises

At present, aviation manufacturing enterprises have made many innovations in the introduction of skilled personnel, training and training, staffing, reserve retention and other talent team construction, but it can not meet the requirements of future intelligent manufacturing for skilled personnel, mainly manifested in:

2.1. Lack of skilled personnel echelon construction system

Although enterprises adhere to the talent management concept of 'one generation of products, one generation of technology, one generation of equipment, one generation of management and one generation of talents', with the improvement of intelligent manufacturing technology platform, higher requirements are put forward for front-line professional skilled talents, and the cultivation and selection of skilled talents are also facing increasingly prominent contradictions. How to systematically carry out the cultivation of new skilled talents and implement the management concept of enterprise skilled talents in the cultivation of skilled talents is an urgent problem for current aviation manufacturing enterprises.

2.2. Lack of training carrier for skilled talents

Due to the lack of on-site work experience, a large number of new skilled personnel have been weakening their role in adapting to the replacement of product technology. At the same time, they lack support and interaction with high-skilled personnel on the spot, which inhibits and restricts the sustainable development and progress of skills. Mainly reflected in the following areas:

The on-site operators trained by specialization, standardization and standardization mode, due to the increasingly simple operation of skills, affect the echelon construction of skilled personnel and form a fault. Due to the lack of innovation and learning time and space, it is difficult to adapt to the development of technical skills, and the improvement of skills is slow.

Due to the lack of technical learning, simple production skilled talents are increasingly difficult to adapt to the progress of technical skills; For the purpose of operation, it is more difficult to achieve a qualitative leap in mass production as a whole by highlighting the talent training mode of personal superb skills, which greatly restricts the development of production.

2.3. Severe brain drain in high-end professional skills

A newcomer needs at least five years of practical exercise to grow into a production backbone with skilled operation skills. It also needs three to five years of training experience to cultivate a professional guiding and innovative talent from a production backbone. During this period, the probability of elimination and loss of post adaptability is as high as 90 %, and the number of core elites who can eventually grow into production is even less. The loss of skilled talents and even elites will directly lead to the collapse of the talent resource structure of enterprises and affect the development of scientific research and production of enterprises.

2.4. Traditional Production Organization Mode Restricts the Promotion of Talent Ability

The traditional grass-roots production organization mode with team as the carrier, the responsibility of grass-roots team managers under the requirements of management system is constantly enlarged, and the basic work of managers is increasingly cumbersome, stretched, and even poor to cope with, which is difficult to emancipate and truly think about the goal of building team development ; Individual employees under the team management mode, passive acceptance of management requirements, innovation autonomy and the improvement of the overall skill level are intertwined by the realistic contradictions of various interest distribution and professional competition, resulting in various problems affecting the team harmony. The team management mode seriously affects the utilization of skilled talents and the promotion of subsequent talent training.

3. New Requirements of Intelligent Manufacturing for the Construction of Skilled Personnel

The intelligentization of intelligent manufacturing production process and the integration and informatization of manufacturing tools will greatly blur the positioning and traditional boundaries between managers, technicians and skilled personnel. Intelligent manufacturing requires a skilled personnel to understand and even master the skills of the whole production process on the basis of mastering the basic production technology and core technology of the position. This paper classifies the knowledge system that the skilled talents need to master according to the discussion in Standard Industry 4.0. [3,4]:

First, in terms of intelligent processing technology, skilled talents mainly need to master intelligent NC programming, virtual manufacturing, intelligent clamping and cutting, and adaptive processing technology.

Secondly, in the application technology of intelligent CNC machine tools, skilled talents mainly need to master the development technology of CNC machine tool health monitoring, CNC system secondary development, CNC machine tool error detection and compensation, spindle test and auxiliary function.

Thirdly, in the aspect of intelligent workshop management and control technology, skilled personnel mainly need to master the technical difficulties of digital workshop integration, three-dimensional visual monitoring and reproduction, intelligent scheduling and job scheduling, intelligent logistics and resource management. Intelligent manufacturing talents need to master knowledge system as shown in Table 1.

4. Construction of Talent Team System for Aviation Manufacturing Enterprises

In order to meet the needs of intelligent manufacturing for skilled personnel, this paper constructs the talent team system of aviation manufacturing enterprises from the following aspects.

4.1. General idea of the construction of skill talent team system in aviation manufacturing enterprises

Facing the challenges and opportunities brought by the rapid development of intelligent manufacturing to aviation manufacturing industry, higher requirements are put forward for the construction of skilled personnel in aviation manufacturing enterprises. Enterprises must combine with the actual production and start from the aspects of ' selection, education, use and retention ' of skilled personnel to systematically construct the construction of skilled personnel in enterprises.

In terms of talent selection : compared with traditional manufacturing, intelligent manufacturing has higher requirements on the selection of skilled talents in SK enterprises, and pays more attention to the comprehensive quality of talents. Firstly, it is necessary to ensure that high-quality talents who meet the requirements of intelligent manufacturing can be continuously introduced to form talent reserves. Then on this basis, the situation of existing skilled personnel is analyzed, the basic information is sorted out, the personnel structure is rationally allocated, and the internal promotion and transfer channels are opened. Finally, according to the actual situation of the enterprise, the needs and directions of future selection and recruitment are adjusted to ensure the rationality and accuracy of talent introduction.

In terms of educating people : SK enterprises need to combine the actual situation of enterprises, build a platform and carrier for rapid growth, and establish an efficient training and cultivation system of skilled personnel. From the beginning of the entry of skilled talents into the enterprise, we should continuously pay attention to the growth of skilled personnel by establishing independent files and incorporating long-term training plans, and improve the growth rate under the premise of ensuring quality, so as to meet the requirements of the new situation and cultivate compound talents with programmable, maintenance-oriented and operational skills. It is also necessary to establish an effective, reasonable and scientific evaluation mechanism for technical personnel, explore the human capacity model, and lay the foundation for staffing.

In terms of employment : system to build a three-dimensional training system, increase investment in resources, to carry out all aspects of skills, technical ability to enhance training, to help skilled personnel to enhance post capacity on the basis of further strengthening the standardization of job title evaluation, improve the accuracy of post matching, increase the output of compound talents to management posts, improve production management efficiency.

In terms of retention : through skilled personnel to carry out people-oriented soft environment to create and other aspects of training security, retain the necessary skills for enterprise development, to ensure the sustainable development of enterprises.

Based on the above construction ideas, this paper puts forward the 124 system construction framework of skilled talents in an aviation manufacturing enterprise, as shown in Figure 2. The system achieves one ultimate goal through two major infrastructure construction and four pillar training modes. One ultimate goal is to form a professional talent echelon, two bases are the training model of new entry skilled personnel and the competency model of skilled personnel, and four pillars are three-dimensional learning model, knowledge engineering management, production standardization and team-based professional production organization model.

4.2. Constructing Competency Model of Skilled Talents

Based on the characteristics of intelligent manufacturing and the actual situation of enterprises, this paper establishes the competency model of skilled talents : its core is the organizational mission, and for enterprises, it is to complete the production target task. To achieve organizational mission, it is necessary to organize core competencies, improve production efficiency and promote the achievement of production objectives and tasks ; According to the requirements of organizational core competence, further build employee core competence, employee core competence is divided into skills, literacy, development and health. The competency model for skilled personnel is shown in Figure 3 [5].

After completing the construction of the competency model system of skilled talents, it is necessary to further decompose and evaluate, so as to complete the classification and stratification of skilled talents. Through regular organization to carry out skill talent evaluation, establish talent development file, objectively analyze the technical ability and personal characteristics of employees, evaluate the development potential of employees, and rationally plan their career development, so as to provide objective basis for staff training. Based on this evaluation method, enterprises can also find the short board of staff and enterprise development ability, formulate and carry out targeted training to improve production efficiency. In the specific application practice, it is necessary for employees and enterprises to cooperate with each other. Employees need to truly understand their knowledge level and skills weakness. Enterprises should accurately grasp the ability short board and development potential of employees, so as to analyze the problems existing in the intelligent production organization, so as to achieve clear goals, improve the training effect, make up the short board and improve the production efficiency in the later targeted training.

Combined with the production characteristics of enterprises and the requirements of intelligent manufacturing, this paper puts forward six dimensions including professional skills, professional knowledge, learning ability, communication ability, expression ability and practical experience to evaluate the ability of employees. Skilled personnel competency model scoring table as shown in table 2.

Table 2 Skilled Talent Ability Model Score Table

Name	special skills	professional knowledge	learning capacity	communication ability	expressiveness	practical experience
Personnel1	3	5	4	3	6	2
Personnel2	4	6	4	5	3	4
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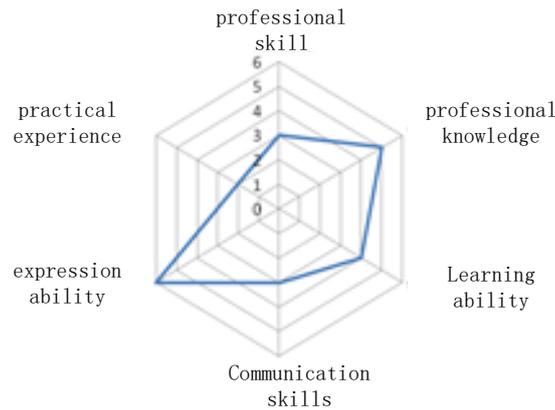


Fig 1 Radar chart of skill talent ability model

4.3. Set up the training mode of new entry skilled personnel

4.3.1 Develop an Eagle Program for Skilled Talents

The traditional one-to-one support mode of “mentoring with apprentices” cannot meet the requirements of intelligent manufacturing for the planning, systematic, normative and comprehensiveness of skilled talents. On the basis of a comprehensive analysis of the experience and lessons learned from the enterprise training work in recent years, this paper believes that a three-year special training plan, namely, the “Eagle Plan,” can be formulated to conduct systematic training for new recruits of enterprises. The plan can be divided into three stages: centralized training, monitoring induction and production practice.

Centralized training phase

Referring to the situation that supervision, guidance and evaluation training modes exposed in previous decentralized training have led to unsatisfactory training results, according to the actual situation of enterprises, the centralized training mode is adopted for the entry training of newly recruited skilled personnel, and the training management is improved. The training cycle is six months. Through the intensive centralized training mode of 6 months of teaching and practice, the new entry skilled personnel have the skill level of CNC operator and master the relevant operation process specification, so as to become a qualified intelligent manufacturing flexible production line staff.

Monitoring the induction stage

Through the early centralized training, so that students to achieve independent job operation skills and quality needs, into a period of three months of monitoring job stage, let the students to participate in the production line work, the adaptive training of the position work, during this period is followed by the 'guidance technician monitoring job' training mode, by the enterprise unified arrangement 'one to one' technician backbone, supervision and guidance of new employees to the independent work of the position work, participate in management and guidance to improve job skills. Implement the regulation of 'monitoring and protection' of new recruits and relevant personnel monitoring and protection policies, consolidate and improve the students' skills to adapt to the job. Examination of qualified trainees during post adaptation period, formal confirmation of induction and implementation of independent production tasks.

Production practice stage

The production practice stage is the training stage of the mature period of new employees. After assessment, new employees with independent induction ability carry out 27-month production practice exercise, mainly with team participation and performance task completion assessment. Through production practice, on the basis of mastering professional basic skills, and through mastering the equipment, products and team production process control requirements of the post, new employees are gradually built into skilled post operation talents.

Enterprises are responsible for organizing corresponding skills promotion, expanding skills training and stage skills competition activities, excavating skilled talents, conveying talents for the construction of production skills echelon, and laying the foundation of human resources for the construction of high-skilled personnel.

4.3.2 Building Stereoscopic Learning Model

Under the trend of intelligent manufacturing, the traditional passive training mode of aviation manufacturing enterprises has been unable to meet the requirements of the new era. In order to meet the requirements of intelligent manufacturing, it is necessary to improve employees' active learning ability and autonomous learning ability. Therefore, this paper builds a "multi-dimensional three-dimensional learning model" consisting of four parts: night school training, high-quality lecture group, production management forum and technician lecture hall, namely, a three-dimensional learning model with night school training as the core, high-quality lecture group as the leading, production management forum as the bridge, and technician lecture hall as the platform, so as to promote the learning and application of intelligent manufacturing knowledge and technology in all directions and dimensions.

Night school training mainly uses spare time to carry out technical knowledge, quality control, basic knowledge of equipment and IT software training for the voluntarily registered production line operators. Through night school training, on the one hand, it can improve the knowledge level of front-line operators; on the other hand, it can also reserve talents for the development of enterprises and provide a human basis for the construction of flexible production lines through the performance and investigation of employees during night school training.

The high-quality lecture group is mainly composed of the management, skilled elites and visiting scholars of the enterprise. It sets up courses such as innovation methodology, frontier scientific and technological knowledge, management innovation methods and tools application, and improvement of work quality. It guides skilled personnel to understand the development trend of intelligent manufacturing, industrial dynamics and application of frontier technology in many aspects, and explores the technical problems and difficulties that enterprises have encountered in the development process, so as to improve employees' basic work quality and innovation and efficiency.

Production management forum is an open forum organized by enterprises. It regularly organizes the participation of young technical talents. The theme of the forum is not limited to the discussion of production technology. From foreign language learning, book recommendation to historical humanities, it has various themes and rich themes. With a relaxed attitude and open posture, it creates a good atmosphere of learning and discussion, so that the production management forum becomes a bridge of communication and a link of contact. It not only improves the comprehensive quality of employees, but also meets the social needs of skilled personnel to a certain extent, and provides a basis for the selection and appointment of skilled.

The Technician Hall is to establish a professional learning platform for business backbones. The purpose is to invite experts and teams in the field of intelligent manufacturing research to teach intelligent manufacturing knowledge through the establishment of the platform, explore the practical application of intelligent manufacturing frontier technology in enterprises, solve the technical problems encountered in the establishment of flexible production lines under the background of intelligent manufacturing, and explore and cultivate skilled experts with development potential and research ability within the enterprise through this platform.

4.4. Building the Standardization System of Production Operation

As the standardization work based on the lean concept, it is the core power to achieve lean production, and the promotion of production operation standardization is the goal of intelligent

manufacturing, and even the manufacturing industry to form competitiveness and adapt to the unremitting pursuit of technological development. Combined with the characteristics of enterprises, this paper believes that the exploration of promoting the standardization of production operations is carried out from the aspects of establishing the operation specification of equipment system, implementing the standardization of high-value parts, and strengthening the operation specification of process quality control.

Establishment of equipment system operation specification : by the enterprise hardware maintenance department, process technology department and production department, in view of the enterprise various types of high-end CNC equipment system operation, establish standard operation specification ; As the core organization of enterprise skills, the technician team guides the excellent skilled talents who are proficient in the operation skills of advanced numerical control equipment system to play their advantages through standard work, and participates in the preparation of core operation process specification and post-calibration work. The standard operation process specification for CNC equipment is established to effectively prevent equipment, products and personal safety accidents caused by equipment operation errors.

The implementation of high value parts standardization work : Due to the high value and key important product characteristics of enterprise parts production, the standardization work and quality control of its production are particularly important. Therefore, enterprises should organize technicians and backbone personnel to promote the operation standardization and standardization of the production site by adopting “ 《Standardized operation instruction》 ” for the production of NC high-value parts. On the basis of lean learning, aiming at standard operation guidance, the lean concepts of process error prevention, operation diagnosis, error identification, process decomposition, drill experience, and quality improvement are introduced. Combined with the pilot construction of lean unit, the standardization of high-value parts is actively promoted from the aspects of template creation, template preparation, and application of new tools..

Strengthening process quality control operation specification : quality is the lifeline for manufacturing enterprises to seek development. Enterprises in the construction of quality work, from the early post-summary prevention mode, has leaped into through the establishment of perfect system norms and process control ; In view of the hidden dangers of operation, using the concept of KYT risk early warning training, the warning and preventive measures are established, and the content of risk early warning of standardized operation guidance is improved. By reminding the operator to execute according to the process control process in the work, the operator is promoted to improve the ability of independent prevention and early warning. Among them, the application of tools such as “ process quality control table ” and “ process quality step control table ” pioneered by enterprises has gradually been recognized and promoted within enterprises, and has received positive praise in intra-industry exchanges, as shown in Table 3.

Table 3 Enterprise Process Quality Step Control Table

Review tooling origin before machining, record according to specification									
Parts confirmation		Quality number	Axis 1 Axis 2	process		Prior process Submission		operator	
Clamping status		flatness		linearity		Processing master Number of axes		date	

origin: X1 Y1 Z1 origin of correction: X2 Y2 Correction personnel:												
Attentions in this process: 1. Note that the machined surface of the part is A 2.Hard straightness guaranteed within 0.05 mm 3. Biaxial machining alignment error within 0.05 MM.....												
Work ing step	progra m name	Attentio ns in step process ing	Origi n addr ess	Confir m calling progra m	Multi- axis linkage startin g inspec tion	Specifica tion inspectio n of tool magazine	Actu al knife lengt h	deviati on value	Verificat ion procedu re confirm ation	Processin g state confirmati on	Perform operatio n confirm ation	Confirma tion / date complete d

5. The implementation guarantee of enterprise skill talent team system

5.1. Expanding the Way to Promote Skilled Talents

In view of the relatively narrow channel of skilled talents, the chief technician, skill expert, special skill expert and chief skill expert are added to expand the post level, enjoy the treatment of relevant posts, and expand the career development channel of skilled personnel. Position level, treatment and related requirements are shown in table 4

Table 4 Enterprise skill talents channel

Post level	Post entitlements	Job requirements
Job Requirements Chief Skills Expert	Approximately at the general manager level	<p>Actively understand and master the international advanced operation skills of this type of work, familiar with the development status of this type of work, its leading role in the development of this type of work ;</p> <p>Superb skills or have some kind of excellent skills, create domestic recognized advanced operation method, with strong innovation ability and organizational ability, can lead the team to catch up with the domestic advanced level of this type of work ;</p> <p>As the main core member, undertake the key task of scientific research and production and major technical research, solve the key technical problems in key model development, technical personality, technical transformation and high-tech equipment introduction, use and maintenance;</p> <p>Be good at finding talents, cultivating talents, and participating in the training of skilled talents in this type of work. Account for training tasks such as planning, training and teaching, taking apprentices on time and guiding skills competition</p> <p>Participate in special skill experts, skill expert review, tenure assessment, etc.</p> <p>Active participation in skills competitions and external exchanges at all levels</p>

<p>Special skill experts</p>	<p>Approximately equivalent to deputy general manager level</p>	<p>Superb skills in principle or some kind of excellent skills, to create domestic recognized advanced operation method, will have strong innovation ability and organizational ability, can lead the team to catch up with the advanced level of the development of the industry;</p> <p>As a member of the project, undertake the key tasks of scientific research and production and major technical research, solve the key technical problems in key model development, technical personality, technical transformation and the introduction, use and maintenance of high-tech equipment;</p> <p>To undertake the tasks of training plan formulation, training and teaching, timely mentoring and skills competition guidance;</p> <p>Participate in skill expert or chief operating technician review, term assessment, etc;</p> <p>Participate in skill competitions and external exchanges</p>
<p>skill expert</p>	<p>About equivalent to the factory director level</p>	<p>Lead the Technical Development of the Profession;</p> <p>To undertake key tasks and take part in major technical problems;</p> <p>To undertake the task of cultivating talents in this occupation (type of work) and serve as a mentor.</p> <p>Suggestions on technical transformation and introduction of major equipment</p> <p>Leading Project Achievements, Declaration Patent Achievements</p>
<p>Chief technician</p>	<p>Approximately equivalent to the deputy director level of a specialized plant</p>	<p>Professional skill leader;</p> <p>To undertake key tasks and participate in major technical challenges;</p> <p>To undertake the task of cultivating talents in this occupation (type of work) and serve as a mentor.</p> <p>Leading or participating in project results, filing patent results</p>

5.2. Establishing the Appointment Model of ' Capability Spiral ' for Skilled Talents

In order to meet the requirements of intelligent manufacturing, on the basis of the original occupation channel, according to the characteristics of intelligent manufacturing work, two occupation channels of business management and skill operation are established respectively according to the structure of enterprise skilled personnel. According to the ability level, the grade is set up, and the management class is divided into professional staff, team leader, project leader, grass-roots management and cadre experts from low to high. Skill operation class, from low to high are entry students, operators, technicians and skills experts. In this way, through the cross appointment, the professional channel of skilled talents is opened, so that a skilled talent can become a skilled expert through the study of post technology, and can also become an excellent management talent in line with the requirements of intelligent manufacturing by continuously improving management literacy.

5.3. Construction of selection competition and internal appointment mode

In order to strengthen the flow of talents and meet the needs of standardized production system of lean manufacturing mode under the trend of intelligent manufacturing, the establishment of internal appointment mode and internal competition mode is promoted in the enterprise.

Selection Model

Internal placement is mainly based on the production needs of enterprises, aiming at the difficulties of enterprises in different stages of scientific research and production tasks. The main purpose is to achieve the production coordination of flexible production lines, and also provide a communication channel for skilled talents in different positions, laying the foundation for the selection and investigation of the ability spiral appointment in the next step.

Selection Model

In order to meet the needs of intelligent manufacturing for multi-post skilled talents, accelerate the flow of enterprise personnel, and encourage the production line skilled personnel to participate in the open competition for technology and management positions, the performance of competitive personnel is set according to the personal ability model, and the competitive personnel are evaluated one by one from four aspects of communication, coordination, collaboration and logical thinking ability. Finally, the competitive conclusion is reached by agreement.

5.4. Incentive mechanism of innovative talents

The enterprise production management department carries out the exploration of employee integral system. The integral system is carried out from different fields of learning growth, work performance, skill innovation, management innovation and spiritual civilization. When the integral reaches a certain score, it can exchange gifts, obtain training opportunities, and go out for recuperation opportunities. The integral system is fixed as a management method, and assisted by information technology. Since the implementation, skilled personnel have used integral exchange to strive for lean engineers and six sigma green belt learning opportunities up to 16 people.

6. Conclusion

With the rapid development of manufacturing industry to intelligent manufacturing, the existing manufacturing enterprises, especially the domestic aviation manufacturing enterprises, are facing more and more challenges. Starting from the requirements of aviation manufacturing enterprises for skilled talents under the trend of intelligent manufacturing, this paper focuses on the analysis of the construction of skilled talents system under the trend of intelligent manufacturing. Targeted selection and cultivation of skilled talents are carried out, and the competency model of skilled talents is established. Through the construction of new entry personnel training system, the problem of talent entrance training is solved. In daily work, the skilled elite team is cultivated from the aspects of learning ability model and standardization engineering, and the overall quality of skilled personnel is improved, so as to meet the demand of intelligent manufacturing in the aviation manufacturing industry, and realize the purpose of the growth of skilled talents and the development of enterprises.

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