International Journal of Advanced Education and Research
ISSN: 2455-5746
Impact Factor: RJIF 5.34
www.alleducationjournal.com
Volume 3; Issue 1; January 2018; Page No. 19-24

The studies on the training of mathematics and applied mathematics talents in Universities

[1] Lu Liu, [*2] Zezhong Yang
[1] MA, The School of Mathematics and Statistics, Shandong Normal University, Jinan, China
[2] PhD, The School of Mathematics and Statistics, Shandong Normal University, Jinan, China

Abstract
Universities have an unshirkable responsibility to train high quality talents. However, there are many problems in the training of talents in mathematics and applied mathematics in universities in China. This paper collated and analyzed the achievements of previous research and gave some suggestions for future further research.

Keywords: mathematics and applied mathematics, practice teaching, training strategies

1. Introduction
With the successful transition from elite education to mass education in China, the scale of higher education is also expanding. Universities are bearing the training task of high-level talents in China, and are the support of economic development and technological progress. Mathematics and applied mathematics is the traditional major of universities, the Chinese government pays great attention to the quantity and quality of the talents training of this major. In recent years, although the number of talents in mathematics and applied mathematics continues to rise, there are many problems in the quality of training.

2. Problems Faced by the Training of Mathematics and Applied Mathematics
2.1 Undefined Training Objectives
Niu Yuqi & Meng Xiaoran thought that although many universities had set up the mathematics and applied mathematics major, some schools did not have clear professional orientation, most of the training objectives were specialized personnel working in the departments of education, scientific research, and the economy. The orientation for mathematics and applied mathematics major was too broad, which caused that the employer was vague and the graduates' employment direction was not clear. (Niu, Y.Q. & Meng, X.R., 2011) [1].
Chen Xiu and others thought that in the construction of mathematics and applied mathematics major, applied undergraduate colleges still imitated or modified some training programs of academic universities and had not form its own training objectives, which restricted the development of the major. (Chen, X. & Zhang, X. & Niu, X., 2012) [2] Bai Xiu and Yang Peifeng put forward that in the development of training programs, many universities were not only lacked preliminary research but also lacked improvement and revision in later period, which resulted in insufficient professional development power. (Bai, X. & Yang, P.F., 2014) [3].
Dai Houping thought that many universities did not discriminate between mathematics major and mathematics and applied mathematics major in essence, so the orientation of training was unclear. (Dai, H.P., 2017) [4].

2.2 Unreasonable Professional Curriculum Setting
Nie Xijun and others mentioned that the specialization of mathematics and applied mathematics curriculum led to the single knowledge structure of students, and it was difficult to reflect the professional characteristics. The number of math courses was too large and the content was too comprehensive, moreover, strict teaching plans and syllabuses had been formulated, resulting in narrow of basic courses, specialization of specialized courses, more compulsory courses and fewer elective courses, which was not conducive to the improvement of students' comprehensive ability. (Nie, X.J. &Li, M.H., 2014; Wang, C.X. & Zhu, B.Z., 2016) [5, 6].
Wang Haiyan and others thought that the contents of mathematics and applied mathematics in colleges were out of touch with social needs, and were not closely related to actual jobs, the abstractness of mathematics itself also made it more difficult for students to learn, and then they lost interest in learning. In addition, too many subjects were set up in the course, and the proportion of the theory courses was far greater than that of the practice courses, which led to the poor teaching skills of the students. (Wang, H.Y., 2016; Wang, B.J. & Yin, J. &Lu, D., 2015) [7, 8].
Zuo Jiabin and others put forward that curriculum content was completely out of touch with mathematics teaching in primary and secondary schools, curriculum lacked timeliness and practicality, the proportion of education and practice courses was low and the courses could not be well connected with the basic education curriculum system. (Zuo, J.B. &Lu, W.X., 2016; Chen, P. & An, Z.H. & Wang, Y., 2017) [9, 10].

2.3 Backward Teaching Model
Dai Houping and others put forward that the teaching of mathematics and applied mathematics was the same as traditional mathematics, which was the teaching model of chalk and blackboard. (Bai, X. & Yang, P.f., 2014; Dai, H.P.,

2017) [3, 4] Nie Xijun and others thought that although the classroom teaching emphasized the subjectivity of students, teachers actually dominated the whole teaching activities. Students just accepted passively, and inhibited the development of students' divergent thinking and creativity. (Nie, X.J. &Li, M.H., 2014; Wang, C.X. & Zhu, B.Z., 2016) [5, 6].

2.4 Lack of Practical Application Skills Training

Rong Yuan and others believed that students in mathematics and applied mathematics still adopted the traditional teaching mode, which emphasized the theory, ignored the practice and the applied characteristics. Students did not apply the textbook knowledge to practice, which led to a single teaching thinking and a lack of practical ability, it was difficult for them to adapt to market demand for applied talents. (Niu, Y. & Meng, X.R., 2011; Rong, Y. &Yin, X.D., 2017; Wang, X.F. & Cheng, H. & Guo, Y.R., 2015) [1, 11, 12].

2.5 The Weakening of Normal Consciousness

Zhang Dan and others thought that students' normal consciousness in mathematics and applied mathematics was weak and most students disliked to become a teacher, they did not recognize the significance and value of teachers occupation, and most of them did not pay attention to teaching skills in professional training, these factors led them to lose their competitive advantage in employment. (Wang, B.J. & Yin, J. & Lu, D., 2015; Zhang, D. & Zhou, X.G., 2007; Xu, H.W., 2015) [8, 13, 14].

Chen Ping and others thought that some of the students lacked the awareness of teachers' role, the preparation for teaching, the attention to their learning status and their initiative and enthusiasm were far from enough, they could not as soon as possible to adapt to the transformation of the leading role in classroom teaching. (Chen, P. & An, Z.H. & Wang, Y., 2017) [10].

Xiong Mei and others believed that if we lost normal education, we would lose the competitive advantage of mathematics and applied mathematics. If we did not pay attention to the training of normal skills, we would lose the advantage of our own normal education when we were in employment. (Xiong, M & Zhang, D.L. & Yan, Z.Q., 2015) [15].

2.6 Increasing Employment Pressure

Xiong Mei and others believed that with the opening up of the educational pattern and the increasing mobility of talent, teachers in primary and secondary schools had been saturated, and demanded for graduates was decreasing year after year. At the same time, with the continuous enrollment of colleges, a large number of graduates increased, also further increased the pressure of employment. (Xu, H.W., 2017; Xiong, M & Zhang, D.L. & Yan, Z.Q., 2015) [14, 15].

Wang Xiaofeng and others believed that with China's education system and teacher recruitment form changed, the teachers also tended to saturation, in addition, teachers' positions were not only the prerogatives of normal students, the non-normal students by teachers' qualification exam could also enter the teaching post; these factors increased the students' employment pressure. (Rong, Y. &Yin, X.D., 2017; Wang, X.F. & Cheng, H. & Guo, Y.R., 2015) [11, 12].

2.7 High Standards of Society for Talents

Xiong Mei and others thought that with the development of the economy and society, the demanded for talents in all walks of life varied and interdisciplinary. Mathematics and applied mathematics major needed to do well in training normal students and expanded the scope of student internships and employment, so that students could not only become an excellent teacher, but also could engage in other related industries. (Zhang, D. & Zhou, X.G., 2007; Xu, H.W., 2017; Xiong, M & Zhang, D.L. & Yan, Z.Q., 2015) [13, 14, 15].

2.8 Insufficient Teachers' Strength

Bai Xiu and Yang Peifeng thought that in some departments of mathematics and applied mathematics, most teachers could teach basic theory courses, but they lacked teaching experience in some courses, such as economics, finance, auditing, there was a shortage of teachers, and it was difficult to form the teaching team for these courses. (Bai, X. & Yang, P.F., 2014) [3].

Wang Binjie and others thought that under the background of training applied talents, teachers should not only have rich professional knowledge, but also have teaching skills to train applied talents. However, teachers in some universities lacked this skill. On the one hand, the old teacher's idea of training applied talents had not change or did not even know what applied talents were, On the other hand, young teachers lacked experience, though they had consciousness of transformation, they did not know how to do. (Wang, B.J. & Yin, J. & Lu, D., 2015) [8].

3. The Training Strategy of Mathematics and Applied Mathematics

3.1 Making Clear Training Objectives

Xu Hongwei and others thought that in the formulation of talents training objectives, we should fully integrate the needs of the society, impart students' basic theoretical knowledge and focus on the ability of students to apply knowledge. (Xu, H.W., 2017; Su, D., 2014; Liu C.Q. & Luo Z.H., 2014) [14, 16, 17]. Bai Xiu and others believed that the training objectives of mathematics and applied mathematics were to train applied talents for the development of social, the development of economic and the development of science and technology. (Bai, X. & Yang, P.F., 2014) [3]. Jiang Jianming and Chen Qingmei believed that the training objectives of applied undergraduate colleges, students majored in mathematics and applied mathematics should be trained to master the basic theoretical knowledge of mathematics, have the solid basic skills instruction and good computer application ability, also have teaching resources management ability and advanced good teacher occupation accomplishment, meanwhile, they also could engage in education work, management work and had a good ability of innovation and entrepreneurship. (Jiang, J.M. & Chen, Q.M., 2017) [18].

3.2 Deepening the Reform of Teaching

3.2.1 Optimizing the Course Setting

In setting up compulsory and elective courses, Su Dan and others put forward that curriculum setting played an important

role in the reform of mathematics education and applied mathematics education, so curriculum setting should be scientific and reasonable. The school could transform traditional compulsory courses into elective courses and transform traditional elective courses into optional courses to provide more space for personal development. (Su, D., 2014; Zhang, S.Y &Tao, X.X., 2006) [16, 19]. Nie Xijun and others thought that we should set up a professional elective module and carry out the idea of individualized teaching and personality development to meet the actual needs of students at different levels and requirements. (Nie, X.J. &Li, M.H., 2014) [5].

In addition to practical courses, Zuo Jiabin and others put forward that in the curriculum setting, more practical courses about employment and teaching skills should be set up, and the duration of educational courses should be appropriately extended. (Nie, X.J. &Li, M.H., 2014; Zuo, J.B. &Lu, W.X., 2016; Chen, P. & An, Z.H. & Wang, Y., 2017) [5, 9, 10].

In the aspect of curriculum groups' construction, Yu Demin and others thought that we must strengthen the construction of the curriculum groups. Taking social needed as the guidance, curriculum groups were set up based on industry and occupation requirements. It mainly included: basic courses curriculum group, professional curriculum group, computer technology curriculum group, mathematics education technology curriculum group and data statistics analysis curriculum group.(Yu, D.M. & Fang, C.H. & Cai, Y. & Ren, R., 2017) [21] Zhang Yinghui and others also put forward schools should construct the curriculum groups. They divided the curriculum groups into professional basic curriculum group, applied ability curriculum group and normal skill curriculum group. (Zhang, Y.H. & Tao, X., 2016) [20] Fan Lijun and others put forward that in order to let students develop better according to their interest and characteristics, professional courses could be divided into five curriculum groups: algebra curriculum group, analysis curriculum group, geometry curriculum group, statistics curriculum group, experiment and mathematics software curriculum group. (Fan, L.J. &Wu, K.H., 2007) [22].

In terms of modularization of curriculum, Chen Xiu and others thought that the construction of applied teaching system should turn from discipline oriented to professional oriented, take students' ability training as the starting point, and organize teaching structure and building modular teaching system. Taking knowledge as the main line, we reduced the repetition rate of curriculum content, avoided too much emphasis on knowledge system imparting, and paid much attention to the coherence of knowledge in this field. (Chen, X. & Zhang, X. & Niu, X., 2012) [2] Li Yong also thought that schools could train talents through the curriculum system of platform and module. The specialty was divided into three directions, and different course modules were set up in each direction. It mainly included teacher education direction (9 modules), mathematical finance direction (7 modules) and application statistics direction (8 modules). Students could independently choose module courses to learn based on their career planning and interest. (Li, Y., 2017) [23] Nie Xijun and others thought that the curriculum system of four platforms and three modules was set up. It included public teaching platform, discipline teaching platform, professional teaching platform and practical teaching platform. The three modules were specialized elective module, quality extension module and ability expansion module. (Nie, X.J. & Li, M.H., 2014) [5]. Zhang Songyan and others believed that students could choose the professional direction modules according to the characteristics and their professional ideal after mastering the basic theory, basic knowledge and skills. The professional direction modules included mathematical theory, computer application, economic mathematics application and mathematics education. (Zhang, S.Y &Tao, X.X., 2006) [19]. Wang Bingjie and others put forward that in the training of applied talents, universities could reform the training program on the basis of professional characteristics mainly divided the courses into four parts: public courses system, core courses and practical teaching links, the main experiment. On this basis, the employment module and the entrance examination module were also set up for the students to choose according to the needs. (Wang, B.J. & Yin, J. & Lu, D., 2015) [8].

3.2.2 Optimizing Teaching Methods

Su Dan and others thought that the traditional cramming method of teaching was not conducive to the cultivation of students in different aspects, so we should constantly optimize the teaching methods, pay attention to enlightening discussion teaching method, inquiry teaching method and other teaching methods based on students. At the same time, teachers could combine the multimedia information technology to improve the students' interest in the classroom. (Su, D., 2014; Jiang, J.M. & Chen, Q.M., 2017; Yin, M. & Zhu, X.L. & Guo, Q.W., 2015) [16, 18, 24].

Wang Haiyan and others put forward that we should teach at different levels according to the differences of students' level. (Wang, H.Y., 2016; Yu, D.M. & Fang, C.H. & Cai, Y. & Ren, R., 2017) [7, 21].

Yu and others thought that we could integrate information technology into classroom teaching, and built a new form of integrated information education with the new teaching mode of micro lesson and flipped classroom. (Yu, D.M. & Fang, C.H. & Cai, Y. & Ren, R., 2017; Li, Y., 2017) [21, 23]. Lian Yingying and others thought that we could take the mixed teaching method of micro lesson, flip classroom and mobile phone interaction to improve students' learning enthusiasm and initiative. (Lian, Y.Y. & Li, B. & Guo, Y.M., 2017) [25].

Chen Xiu and others believed that it was necessary to increase the students' independent study time and cultivate their autonomous learning ability. (Chen, X. & Zhang, X. & Niu, X., 2012; Wang, C.X. & Zhu, B.Z., 2016) [2, 6].

3.2.3 Optimizing the Content of Teaching

Wang Haiyan and others thought that in order to reply the new trend of talent demand, schools needed to further reform teaching contents, delete obsolete knowledge points and increase new knowledge points. Teachers should properly streamline the theory, increase the actual cases, link the mathematical knowledge with the employment and teaching, and update the teaching content in time. (Wang, H.Y., 2016; Li, Y., 2017; Lian, Y.Y. & Li, B. & Guo, Y.M., 2017) [7, 23, 25].

Jiang Jianming and others believed that the teaching resources of mathematics and applied mathematics were too single, mainly based on books. In order to improve teaching quality,

we could enrich teaching resources from two aspects. On the one hand, according to the school resources and the actual situation, universities could compile textbooks by experienced old teachers; on the other hand, universities could develop various online courses and multimedia courses. The traditional paper materials were developed in the direction of electronic materials, multimedia courseware and so on. (Jiang, J.M. & Chen, Q.M., 2017) [18].

Fan Lijun and others mentioned that the existing mathematics teaching materials were comparatively systematic and comprehensive. However, the efficiency of the class was not high because the school time could not finish all the lessons. At the same time, some courses could not be launched. Therefore, some professional books could be used as reference books for students, which really separated professional textbooks from professional reference books. (Fan, L.J. &Wu, K.H., 2007) [22],

3.2.4 Strengthening Practice Teaching

Schools should cooperate with enterprises to develop together. Yu Demin and others believed that the mathematics and applied mathematics was a science major with emphasis on theory, less practice content, slow knowledge renewal and poor practical ability of students. In order to solve these problems, in the process of training, the related collaborative enterprises were together with schools to build practical platforms for students. (Yu, D.M. & Fang, C.H. & Cai, Y. & Ren, R., 2017; Li, Y., 2017) [21, 23].

Universities should strengthen the practice teaching links. According to the idea of five combinations, three levels, seven links and four years of continuous line, Li Yong thought a practical teaching system for professional courses. The extracurricular activities were closely combined with the teaching in the class. (Li, Y., 2017) [23] Su Dan and others believed that the practice teaching links were the process that students absorbed, digested and applied the theoretical knowledge they have learned. In the course of teaching, practical teaching should be carried out in the course. Different practical teaching links were designed according to different courses to cultivate students' innovative spirit and innovative ability. (Wang, C.X. & Zhu, B.Z., 2016; Su, D., 2014) [6, 16]. Liu Changqing believed that in order to enhance the practice of applied mathematics, firstly, schools should cultivate students' innovation spirit and practice ability as the core of education; secondly, schools should reform the experimental teaching, comprehensive training of the practice ability of students; thirdly, schools should strengthen the second classroom activities to improve students' modeling ability; finally, schools should strengthen the graduation thesis. (Liu C.Q. & Luo Z.H., 2014) [17]. Jiang Jianming and others thought that universities could set up a public elective course of modeling and interest mathematics, and properly increased the proportion of independent experiments and comprehensiveness, and enhanced the quality of all practical teaching links. (Jiang, J.M. & Chen, Q.M., 2017) [18]. Chen Ping and others believed that strengthened the link of practice and education, on the one hand, strengthened the education training and internship efforts, on the other hand, universities introduce the experienced teachers in middle school to teach students teaching skills, meanwhile, let students go out and experience the actual teaching activities. (Chen, P. & An, Z.H. & Wang, Y., 2017; Wang, X.F. & Cheng, H. & Guo, Y.R., 2015) [10, 12]. Xiong Mei and others thought that when students completed the basic courses, according to hobbies, professional characteristics, employment direction, students could set up different interest groups, each group was equipped with a special instructor and carried out practice teaching to improve the ability of solving problems. (Wang, X.F. & Cheng, H. & Guo, Y.R., 2015; Xiong, M & Zhang, D.L. & Yan, Z.Q., 2015) [12, 15].

Universities should strengthen the construction of the practice bases. Yao Xiyan and others believed that we should strengthen the construction of the laboratory, gradually increase the number of educational probation and educational practice bases, and improve the quality of the practice bases. (Su, D., 2014; Yao, X.Y., 2013) [16, 26]. Lian Yingying and others put forward that the training of mathematics and applied mathematics should focus on the construction of practice bases, and the practice bases should be divided into educational practice bases and professional practice bases. (Lian, Y.Y. & Li, B. & Guo, Y.M., 2017) [25].

Universities should pay attention to the cultivation of the ability of modeling. Liu Changqing thought that through a series of lectures on mathematical modeling, the knowledge of modeling was popularized. (Liu C.Q. & Luo Z.H., 2014) [17]. Yao Xiyan and others believed that the idea of mathematical modeling should be integrated into the classroom teaching. Encouraging students to take part in activities such as venture fund project and modeling competition to improve students' comprehensive quality, innovation ability, and ability to solve practical problems. (Wang, B.J. & Yin, J. &Lu, D., 2015; Wang, X.F. & Cheng, H. & Guo, Y.R., 2015; Zhang, D. & Zhou, X.G., 2007; Xu, H.W., 2015; Xiong, M & Zhang, D.L. & Yan, Z.Q., 2015;Jiang, J.M. & Chen, Q.M., 2017; Lian, Y.Y. & Li, B. & Guo, Y.M., 2017; Yao, X.Y., 2013; Long, X.F. & Wang, Y.J. & Sun, W.Q., 2015) [8, 12, 13, 14, 15, 18, 25, 26, 27].

3.3 Perfecting the Teaching Management Mechanism

3.3.1 Setting up An Orderly Management Mechanism

Yin Ming and others thought that democratic management should be carried out in the aspects of training plan formulation, teaching plan implementation, teaching reform and practice, specialty construction and so on, and the leaders in each position should be identified to ensure the good operation of the teaching system. (Jiang, J.M. & Chen, Q.M., 2017; Yin, M. & Zhu, X.L. & Guo, Q.W., 2015) [18, 24].

Bai Xiu and others thought that all universities should establish and improve the management regulations of the teachers' teaching and students' management, making the teaching work to rule-based. (Bai, X. & Yang, P.F., 2014; Jiang, J.M. & Chen, Q.M., 2017; Zhang, S.Y &Tao, X.X., 2006; Yin, M. & Zhu, X.L.& Guo, Q.W.,2015) [3, 18, 19, 24].

3.3.2 Reforming the Students' Assessment Method

Jiang Jianming and others put forward that universities should reform the traditional way of evaluating students, discard the evaluation mode based on the single written test, and use the comprehensive evaluation model which combined with process assessment and result assessment, guide students to change from result oriented to process oriented. Schools also

should pay attention to the examination of students' practical ability and comprehensive quality, realize the diversification of evaluation subjects, the diversification of evaluation contents, evaluation methods and evaluation results, and promote the all-round development of students. (Chen, X. & Zhang, X. & Niu, X., 2012; Jiang, J.M. & Chen, Q.M., 2017; Li, Y., 2017) [2, 18, 23].

3.3.3 Establishing a Reasonable Teaching Evaluation System

Jiang Jianming and others put forward that in the teaching evaluation methods, the main methods were cross listening and student evaluation, questionnaire and so on. Schools should establish a scientific evaluation standard and focus on the effectiveness of teachers' teaching content, teaching methods and teaching methods. (Jiang, J.M. & Chen, Q.M., 2017; Zhang, S.Y &Tao, X.X., 2006) [18, 19].

3.3.4 Perfecting the Double Tutor System of Undergraduate Students

Wang Xiaofeng and others put forward that undergraduates could choose a school tutor and an outside school tutor according to their own circumstances. School tutors were mainly responsible for academic guidance and educational training, and outside school tutors were mainly responsible for guiding educational probation, internship, and teaching research. The double tutor system had effectively promoted the interaction of teaching and communication between universities and primary and secondary schools, played a significant role in promoting the development of students' professional development. (Wang, X.F. & Cheng, H. & Guo, Y.R., 2015; Lian, Y.Y. & Li, B. & Guo, Y.M., 2017; Zhu, C.J. & He, S. & Xu, Z.T.,2013; Yang, M., 2017) [12, 25, 28, 29].

3.4 Strengthening the Construction of the Teaching Staff

Bai Xiu and others thought that we should strengthen the construction of the teaching staff and improve the comprehensive quality of teachers. Universities should introduce talents focus on academic leaders and academic backbones in a planned and hierarchical way, at the same time, universities should introduce preferential policies for attracting talents and give talents generous treatment. (Bai, X. & Yang, P.F., 2014; Wang, B.J. & Yin, J. &Lu, D., 2015; Zhang, D. & Zhou, X.G., 2007; Xu, H.W., 2015; Xiong, M & Zhang, D.L. & Yan, Z.Q., 2015; Liu C.Q. &Luo Z.H., 2014; Yao, X.Y., 2013) [3, 8, 13, 14, 15, 17, 26].

Xiong Mei and others believed that we must pay attention to the training of young teachers, young teachers should often participate in academic conferences, research projects and other activities to improve the academic level and professional quality. Meanwhile, they should often contact with enterprise, and improve their teaching ability according to the actual situation. (Chen, X. & Zhang, X. & Niu, X., 2012; Wang, B.J. & Yin, J. &Lu, D., 2015; Zhang, D. & Zhou, X.G., 2007; Xu, H.W., 2015; Xiong, M & Zhang, D.L. & Yan, Z.Q., 2015; Liu C.Q. &Luo Z.H., 2014; Yao, X.Y., 2013) [2, 8, 13, 14, 15, 17, 26].

Wang Bingjie and others believed that universities should introduce part-time teachers of excellent teachers in primary and secondary schools to increase teachers' strength. (Wang, B.J. & Yin, J. &Lu, D., 2015) [8].

Xu Hongwei and others put forward that schools should establish a teacher employment appraisal system, strengthen the evaluation of teachers' educational ability, pay attention to teachers' training at all stages, and effectively implement the employment competition mechanism to stimulate teachers' enterprising consciousness and improve their teaching level. (Zhang, D. & Zhou, X.G., 2007; Xu, H.W., 2015; Liu C.Q. & Luo, Z.H., 2014) [13, 14, 17].

4. A Review of the Research

Through the collation of the above literatures, we can see that the research on talents training in mathematics and applied mathematics mainly focuses on the two aspects: problems in training process and reasonable and feasible training strategies. The problems in the training of mathematics and applied mathematics talents include eight aspects: unclear training objectives, unreasonable curriculum, backward teaching mode, practical skills shortage, students' weak normal consciousness, employment pressure, the social high demands and the shortage of teachers. It can be said that the current research is quite comprehensive. For how to solve these problems, the predecessors made clear from four major directions: the training objectives, deepen teaching reform, strengthen teaching management and strengthen the construction of teachers, each direction was divided into many aspects including clear objectives, curriculum construction, teaching methods, teaching content and so on.

Although the aspects of the research are comprehensive, the depth of the research is obviously inadequate. First, overall, most of the literatures are only discussed on the basis of theory, they all lack empirical research and do not have real data to prove the author's view is correct or not. It is also not known that the current situation of mathematics and applied mathematics, the persuasion of these literatures is poor and the training strategies are also difficult to popularize. Secondly, there are many ways to train talents in these literatures. However, there are few studies on how to make specific training programs and how to implement them in combination with actual situations. These all need to be further studied and discussed.

5. Reference

1. Niu Y, Meng XR. The Reformation and Exploration of the Curriculum and Teaching Content System of Mathematics and Applied Mathematics. Henan Education Middle. 2011; (08):38-39.
2. Chen X, Zhang X, Niu X. The Exploration and Practice of the Construction of Mathematics and Applied Mathematics in Applied Undergraduate Colleges and Universities. University Mathematics. 2012; 28(01):5-9.
3. Bai X, Yang PF. Strengthening the Construction of Mathematics and Applied Mathematics Majors Based on the Development of Social Economy and Science and Technology. Inner Mongolia Science Technology and Economy. 2014; (02):23-24.
4. Dai HP. The Research and Practice of the Construction of the Main Course Group in Mathematics and Applied Mathematics. Journal of XiangNan University. 2017; 38(02):88-90+125.
5. Nie XJ, Li MH. Research on the Training Model of

Creative Talents in Mathematics and Applied Mathematics. Journal of Panzhihua University. 2014; 31(05):85-87.
6. Wang CX, Zhu BZ. The Reform and Practice of the Curriculum System of Mathematics and Applied Mathematics and the Training System of Innovation Ability. Education Teaching Forum. 2016; (51):116-118.
7. Wang HY. Study on the Teaching of Mathematics and Applied Mathematics in Colleges and Universities under the Guidance of Employment. Inner Mongolia Education Vocational Education Edition. 2016; (06):92.
8. Wang BJ, Yin J, Lu D. Current Situation Analysis and Countermeasures of Applied Talents Training in Mathematics and Applied Mathematics in Local Universities: Taking Baicheng Normal University as an example. Journal of Baicheng Normal University. 2015; 29(02):70-73+78.
9. Zuo JB, Lu WX. Curriculum Reform and Exploration of Normal Mathematics and Applied Mathematics Major under the Background of Transformation. 2016; 32(12):66-67.
10. Chen P, An ZH, Wang Y. Study on the Teaching Reform of Mathematics Major Based on Normal Education -- Taking the Major of Mathematics and Applied Mathematics of Hengshui University as an example. Journal of Hengshui University. 2017; 19(04):106-108.
11. Rong Y, Yin XD. Elementary Analysis of the Training Mode of Applied Talents in Mathematics and Applied Mathematics. Neijiang science and technology. 2017; 38(07):120+48.
12. Wang XF, Cheng H, Guo YR. Research on the Training Mode of Applied Talents in Mathematics and Applied Mathematics - Taking Henan Institute of Science and Technology as an example. Journal of Science of Teachers' College and University. 2015; 35(03):54-57.
13. Zhang D, Zhou XG. Research on the Training Model of Applied Talents in Mathematics and Applied Mathematics. Journal of Hunan University of Science and Engineering. 2007; (12):21-22+66.
14. Xu HW. Research on the Training Mode of Applied Talents in Mathematics and Applied Mathematics. Education Modernization. 2017; 4(30):24-25+34.
15. Xiong M, Zhang DL, Yan ZQ. Exploration on the Training Mode of Mathematics and Applied Mathematics Professionals in Local Colleges and Universities under the Vision of Transformation and Development. Journal of Qiannan Normal College for Nationalities. 2015; 35(06):52-55.
16. Su D. Exploration of Teaching Reform in Mathematics and Applied Mathematics. Chizi MID. 2014; (13):87.
17. Liu CQ, Luo ZH. Research on the Training Model of Applied Talents in Mathematics and Applied Mathematics. University Education. 2014; (03):91-92+104.
18. Jiang JM, Chen QM. Research and Exploration on the Training Mode of Mathematics and Applied Mathematics Normal Class Professional Talents in the University of Applied Technology. Education Modernization. 2017; 4(03):6-7+10.
19. Zhang SY, Tao XX. Teaching Reform of Mathematics and Applied Mathematics Centered on Curriculum Construction. Journal of Ningbo University Education Science Edition. 2006; (01):107-109.
20. Zhang YH, Tao X. Theory and Practice of Curriculum Group Construction of Mathematics and Applied Mathematics in Local Undergraduate Universities. Journal of Hunan Institute of Science and Technology Natural Science Edition. 2016; 29(01):92-94.
21. Yu DM, Fang CH, Cai Y, Ren R. Methods and Programs of Diversified and Hierarchical Training of Mathematics and Applied Mathematics Normal Direction. Journal of Hunan Institute of Science and Technology Natural Science Edition. 2017; 30(03):85-87.
22. Fan LJ, Wu KH. Some Thoughts on the Construction of Mathematics and Applied Mathematics in General Engineering Colleges and Universities. Journal of Jiangxi University of Science and Technology. 2007; (05):57-58.
23. Li Y. Exploration and Preliminary Practice of the Reform of Education and Teaching System for Mathematics and Applied Mathematics under the Background of Transformation and Development. High Education Forum. 2017; (01):23-27.
24. Yin M, Zhu XL, Guo QW. The Research and Practice of the Construction of Mathematics and Applied Mathematics Characteristic Specialty - Taking HeFei University of Technology as an example. University Mathematics. 2015; 31(06):38-44.
25. Lian YY, Li B, Guo YM. Discussion on the Comprehensive Reform of Local Normal Universities - Taking Mathematics and Applied Mathematics as an example. Education Theory and Practice. 2017; 37(27):13-15.
26. Yao XY. The Idea and Practice of the Construction of Mathematical and Applied Mathematics Specialty. Journal of Yuncheng University. 2013; 31(02):1-6.
27. Long XF, Wang YJ, Sun WQ. On the Cultivation Mode of Applied Mathematics Specialty Oriented to the Needs of Society - Taking Beijing Forestry University Mathematics and Applied Mathematics as an example. Chinese Forestry Education. 2015; 33(01):23-26.
28. Zhu CJ, He S, Xu ZT. The Goal, Program and Implementation of the Comprehensive Reform of Mathematics and Applied Mathematics. China University Teaching. 2013; (02):30-33.
29. Yang M. Study on the Development of the Quality of Mathematics and Applied Mathematics by the Practice Week of Education. Journal of Zunyi Normal University. 2017; 19(05):148-152.