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Continuous Professional Development (CPD) Model Development for Vocational Lecturers

Abstract: Lecturers are professional educators and scientists with the main tasks of transforming, and disseminating science, technology and art through education, research and community service. Education in this century is a big challenge. The dominance of knowledge in education and learning must be able to be wise in using machines for benefit. To create quality lecturers, lecturer professional development is needed to improve their abilities. This study aims to develop a comprehensive and structured Continuous Professional Development (CPD) model to achieve standardized educational goals for vocational lecturers in the nautical study program at the Sekolah Tinggi Ilmu Pelayaran (STIP). Qualitative research with a population of 37 lecturers and a sample of 24 lecturers. The sample technique was purposive sampling. Data analysis techniques using descriptive statistics. The results showed that the value of a continuous professional competency development model required 47% of lecturers' perceptions, 47% of required perceptions of heads of research and community service departments, 61% of needed perceptions of heads of study programs, 61% of needed perceptions of leadership elements (chairman/deputy chairperson) 59%, the perception of the head of the quality assurance unit/headquarters is urgently needed 66% and the perception of the head of the lecturer group is needed 77% apprenticeship on ships.

Keywords: continuous professional development, CPD, lecturer, knowledge and skills, softskill

INTRODUCTION

Various efforts have been made as an effort to educate the life of the nation. Smart human resources are expected to be able to catch up with other countries. Intelligent human resources are expected to have competitiveness to improve their welfare. The teaching and learning process for students is expected to have the knowledge, skills and innovation of life skills and careers. One of the professional developments for lecturers can be carried out through various activities including participating in writing papers, in-house training, attending seminars, training, lesson studies, or other academic activities.

To create quality lecturers, lecturer professional development is needed to improve their abilities. The professional development of educators in the shipping environment, especially the Nautical study program at STIP Jakarta, plays a very important role in improving the quality of their learning to make cadets / cadets who are competent and of high quality (Prayogo, 2022). The same thing was stated by the Institute for Learning (IfL), which stated "Continuing professional development means maintaining, improving an broadening relevant knowledge and skills in your subject specialism and your teaching so

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that it has a positive impact on practice and learner experience.” (Berndt et al, 2017). Vocational education is expected to be a place for special education based on a person's needs for a particular job. In addition to aiming at developing hard skills, vocational education is also oriented towards soft skills, values and attitude education (Bush, 2020). The online education system is expected to be able to make the learning process take place continuously without space and time limits. The education system will certainly have an impact on the role of lecturers as educators. The purpose of this research is to find out how educators and education staff are managed (Prayogo et al., 2022) in the High School of Marine Science according to the Continuous Professional Development (CPD) model.

Lecturers are professional educators and scientists with the main tasks of transforming, and disseminating science, technology and art through education, research and community service. Continuous Professional Development (CPD) or known as Continuous Professional Development is the development of lecturer competencies that are carried out according to needs, in stages, continuously to improve their professionalism. Continuing Professional Development, which consists of 3 sub-elements, namely carrying out self-development, carrying out scientific publications and carrying out innovative work. Continuous Professional Development (CPD) as an increase in professional knowledge and improvement of professional skills which is consciously carried out continuously throughout the life of a lecturer. The application of Continuous Professional Development is expected to maximize the management of education at the STIP Jakarta campus, as well as dependency with superiors, on the other hand to truly make the campus an autonomous institution and have the freedom to be creative and develop. This situation will lead to the ability to manifest active, creative and independent behavior in managing and developing oneself.

Education in this century is a big challenge. The dominance of knowledge in education and learning must be able to be wise in using machines for benefit. Technology in Education is expected to be able to keep up with technological developments. Information and communication technology plays a role in facilitating students, teachers/lecturers, and practitioners. Learning material can be obtained quickly, according to what is needed and can carry out learning activities anytime and anywhere (Santoso et al., 2021). The teaching and learning process becomes more flexible and has a good influence on educational development. Teaching materials can be made as attractive as possible using animation techniques and video footage. Therefore this study aims to develop a Continuous Professional Development (CPD) model to achieve standardized educational goals for vocational lecturers in the nautical study program at the Sekolah Tinggi Ilmu Pelayaran (STIP).

METHODS

The study population was 37 permanent lecturers of the Nautics Study Program, both permanent lecturers without additional assignments, permanent lecturers with additional assignments as Head of Study Program, Head of Lecturer Group, Head of the Pus. Research and Community Service, Head of Internal Quality Assurance and leadership elements (Chairman/Assistant Chair) and a sample of 24 people. The sample was selected using a purposive sampling technique by distributing an open questionnaire online using a Google form to all permanent lecturers of the Nautical Study Program at the Sekolah Tinggi Ilmu Pelayaran. Finally, the number of questionnaires returned to the researcher was used as the sample in this study. The type of data required and collected is in the form of direct observation of the respondents. Therefore, the type of research data is primary data.

This research uses the Research and Development (R&D) method. This research is the development of a systematic method used to design, develop learning programs and products that can meet internal criteria (Harland, 2014). This research was carried out at STIP (Sekolah Tinggi Ilmu Pelayaran), namely a vocational college in Jakarta, especially the Diploma IV program, Nautics Study Program. The research instrument used was a

questionnaire in the form of a questionnaire and an interview guide. The data required includes primary data and secondary data. Primary data is in the form of words, spoken utterances and subject behavior (respondents or informants) related to the model for increasing the competence of vocational lecturers at STIP Jakarta.

The questionnaire uses a Likert scale, namely Score 1 = Not needed, Score 2 = Less needed, Score 3 = Needed, Score 4 = Very needed. Secondary data comes from documents related to the lecturer competency improvement model, for example laws and regulations, handbooks, technical manuals, work programs that have been made, Standard Operating Procedures and so on. Data analysis techniques using descriptive statistics. Descriptive statistics are used to analyze data by describing or describing the data that has been collected as it is without intending to make general conclusions or generalizations (Harland, 2014).

RESULTS AND DISCUSSION

Previous research shows a model of increasing the development of Continuing Professional Development (CPD) or known as Continuing Professional Development for STIP lecturers for the Nautics study program. After doing the analysis, the next researcher designed a learning model that would be tried. The model design is piloted to a defined limited sample, then evaluated and corrected if there are still weaknesses. Evaluation results and The improvement is used as a hypothetical model. Hypothetical models then applied in classroom learning as an implementation. The first stage is then evaluated and refined if deemed still there are deficiencies or weaknesses that still exist deficiencies or weaknesses that still appear, then reapplied in the next learning in class as the implementation of the second stage, then evaluated and refined again if there are still weaknesses. And so on until the research gets the expected results.

The aspects that must be met with the CPD model are: (1) Training is adjusted to the tridharma programs of vocational lecturers' tertiary institutions; (2) Small groups of 2-3 people are formed both in the training process and follow-up training as a forum for vocational lecturers to conduct research and group service and teaching teams, (3) Training can be carried out within the scope of the study program or department; (4) Availability of training manuals as a reference for implementing the CPD model (as a separate product of this research).

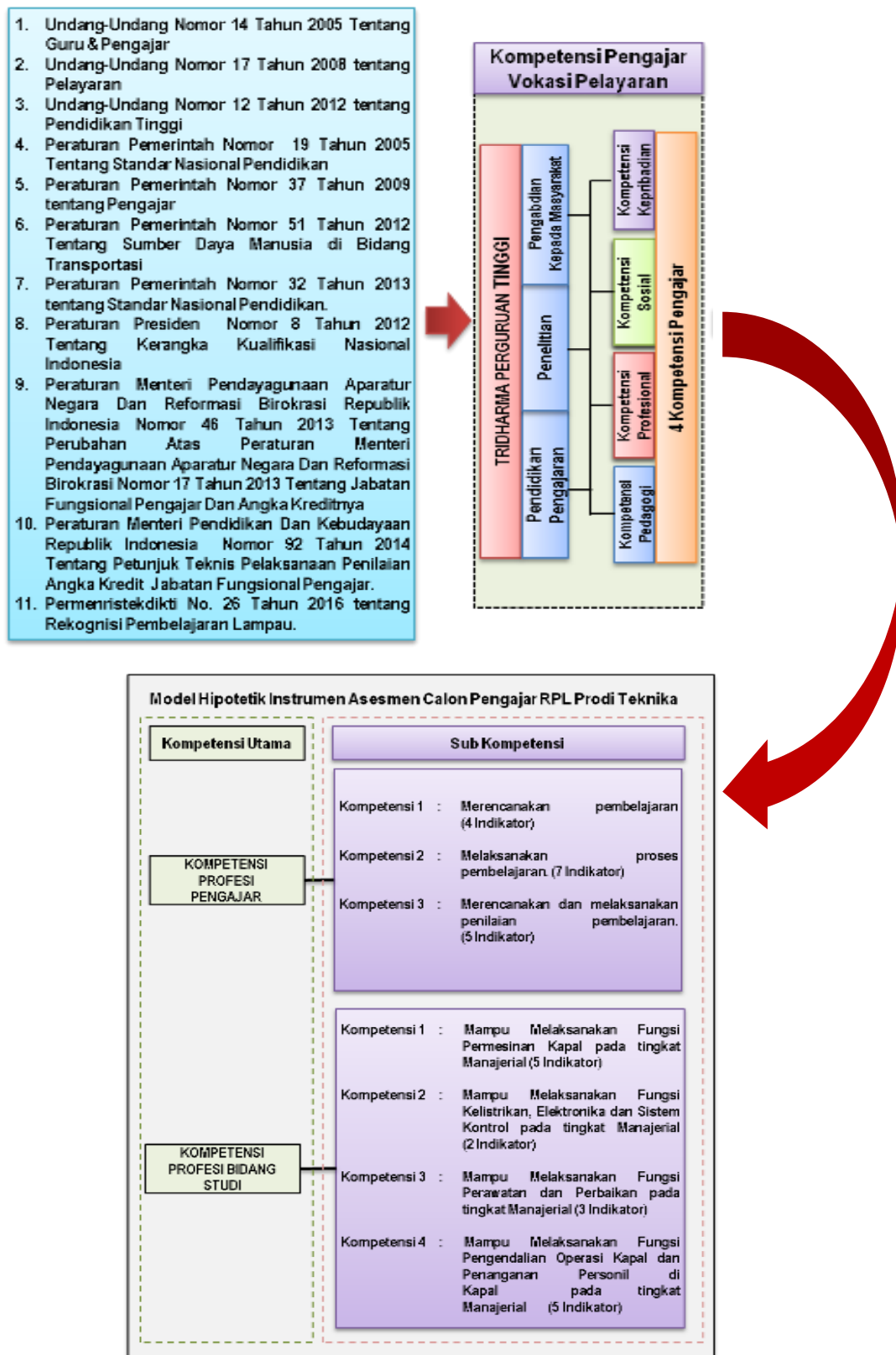


Figure 1. Hypothetical Model of the STIP Nautical Study Program

According to the regulations of two ministries/departments, namely the Ministry of Education and Culture and the Ministry of Transportation . The Ministry of Education and Culture has the authority to authorize and accredit both study programs and institutions, and the Ministry of Transportation has the authority to authorize the Professional State Examination for Seafarers. In this case the Ministry of Transportation acts as Administrator appointed by International Maritime Organizations (IMO). Each

ministry has standards for implementing vocational higher education in the maritime field, although the legal basis and government regulations still refer to the same provisions. However, at the ministerial regulation level, each establishes its own policy, which sometimes creates confusion in its application in the field due to different standards. Even though it is actually related to one another following the SNP as stated in Article 8 of the Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 70 of 2013 concerning Education and Training, Certification, and the Seaman Watch Service as amended through the Minister of Transportation Regulation Number PM 140 of 2016.

Table 1. Respondent Data

Position	Respondents
Lecturer	19 people
Head of Research and Service Unit	
To Society	1 person
Head of Study Program/Department	3 people
Leaders (Chairman, Deputy Chairperson)	6 people
Head of Quality Assurance Unit	1 person
Head of the Lecturer Group	7 people

Results of Data Analysis are presented as follows. Table 1 describes the number of respondents involved in the study. Based on the results where for statement A for lecturers according to table 2, shows the value of the results learning, collaboration skills and having the ability to interact/cooperate, respect, have leadership, communication, motivator, creativity, discipline and the ability to learn. Of course it is needed with prominent soft skills such as: mastering nautical knowledge, ship engineering knowledge, port knowledge, sea transportation knowledge, general transportation knowledge, humanities knowledge, knowledge related to IMO Model Course, Information Technology and Computer knowledge, e-learning knowledge, knowledge of distance learning, knowledge of assessment and examination, knowledge of the Learning Management System, and knowledge of academic writing techniques. Lecturers also need skills in developing instructional learning methods, skills in assessment and evaluation methods, skills in mentoring, skills in tutorials, skills in learning in the laboratory, skills in learning in simulators, skills in learning in workshops/workshops, skills in building networking with industry, skills in compiling teaching materials/books, skills in compiling journals, skills in Management Information Systems, skills in making CBT (Computer Based Training), skills in making learning videos, skills in making textbooks/modules, skills in making textbooks. To fulfill all of this, self-development programs such as Soft Skills, Knowledge and Skills are needed.

Table 2. Statement Data Processing A

Likert scale	Score	Score (%)
SD	7	0%
D	404	5%
A	3834	48%
SA	3772	47%
Total	8017	100%

Based on the results where for statement G, for lecturers according to table 3, shows the value of the results. A continuous professional competency development model suitable for Nautics teachers, with a background in nautical expert competency certification, is needed 47% by means of: apprenticeship on board as an officer, apprenticeship at a shipping company in the fleet management / operational / crewing section, apprenticeship at a logistics and freight forwarding company, apprenticeship at scouting, apprenticeship at a port company at the loading and unloading terminal,

apprenticeship at a repair company and maintenance of ships/shipyards, apprenticeship in the navigation division, apprenticeship in the maritime division, apprenticeship in the company's ship insurance division, apprenticeship in a classification bureau company, attending competency trainings, attending skills training and training, attending special trainings . 47% of the time needed for continuous professional competency development is needed approximately once every 5 years.

Table 3. Processed Statement Data G

Likert scale	Score	Score (%)
SD	1	0%
D	198	6%
A	1689	47%
SA	1668	47%
Total	3556	100%

Based on the results where for statement D, to show the value of the results As a research and community service head/head unit according to table 4 related to shipping study programs, especially nautical, it is really needed 56% self-development program, development of soft skills competency, knowledge development, skill development, initiation of a nautical teacher proposing a research proposal within 1 (one) year, planning research and community service program funding, drafting research and community service program mechanisms , it takes the role of a research and community service head/head of unit to provide guidance and motivation to instructors in research and community service programs, the role of the research and community service head/head unit is urgently needed by 56% in measuring instructors in their achievements in research programs and community service.

Table 4. Statement Data Processing D

Likert scale	Score	Score (%)
SD	0	0%
D	14	13%
A	33	31%
SA	60	56%
Total	107	100%

Based on the results where for statement G, for research and community service heads/units according to table 5 shows the value of the results. The continuous professional competency development model is suitable for Nautics teachers, with a background in nautical expert competency certification, it takes 47% by means of: apprenticeship on a ship as an officer, apprentice at a shipping company in the fleet management/operations/crewing department, apprentice at a logistics and freight forwarding company , apprentice at scouting, apprenticeship at a port company at the loading and unloading terminal, apprenticeship at a ship repair and maintenance company/shipyard, apprentice in the navigation department, apprentices in the maritime division, apprenticeships in ship insurance companies, apprentices in classification bureau companies, attend competence trainings, skills trainings, special trainings. Time required by 47% for continuous professional competency development approximately every 5 years.

Table 5. Processed Statement Data G

Likert scale	Score	Score (%)
SD	1	0%
D	198	6%
A	1689	47%
SA	1668	47%
Total	3556	100%

Based on the results where for statement B, to show the value of the results as Head of Study Program/Ka. Majors. Majors according to table 6 related to shipping study programs, especially Nautics, have the characteristics of teachers who are needed by 61% having an attitude of confidence, integrity, honesty, caring, independence, initiator, ability to learn, ability to collaborate and have the ability to interact/cooperate, respect, have a soul leadership, communication, motivator, creativity, discipline and ability to learn. As Head of Study Program / Head of Department related to shipping study programs, especially maritime, the characteristics of the knowledge possessed by maritime instructors much needed by 61% with maritime knowledge, ship engineering knowledge, port knowledge, sea transportation knowledge, general transportation knowledge, humanities knowledge, knowledge related to IMO Model Course, Information Technology and Computer knowledge, e-learning knowledge , distance learning knowledge , knowledge of assessment and examination at ion, knowledge of the Learning Management System , and knowledge of academic writing techniques.

As Head of Study Program/Ka. Majors related to shipping study programs, especially nautical, the characteristics of the skills possessed by nautical instructors are needed by 61% ability in developing instructional learning methods, assessment and evaluation methods, mentoring, tutorials, learning in the laboratory, learning in simulators, learning in workshops/workshops, networking with industry, teaching materials/books, compiling journals, Management Information Systems, in making CBT (Computer Based Training), in making learning videos, in making textbooks/modules, in making textbooks. To fulfill all of this, 61% of self-development programs are needed , such as Soft Skills , Knowledge and Skills.

Table 6. Statement B Data Processing

Likert scale	Score	Score (%)
SD	0	0%
D	10	2%
A	207	37%
SA	340	61%
Total	557	100%

Based on the results where for statement G, for Head of Study Program / ka. Majors according to table 7, shows the value of the results. The continuous professional competency development model is suitable for Nautical instructors, with a background in nautical expert competency certification, 67% is needed by: apprenticeship on ships as officers, apprenticeships in shipping companies in the fleet management/operations section / crewing, apprenticeship at logistics and freight forwarding companies, apprenticeship at scouting, apprenticeship at port companies at loading and unloading terminals, apprenticeship at ship/shipyard repair and maintenance companies, apprenticeship in navigation division, apprenticeship in marine affairs, apprenticeship at ship insurance company, apprenticeship in classification bureau companies, attend competency trainings, attend skills trainings, attend special trainings. 67% of the time needed for continuous professional competency development is approximately every 5 years.

Table 7. Processed Statement Data G

Likert scale	Score	Score (%)
SD	0	0%
D	14	5%
A	72	27%
SA	176	67%
Total	262	100%

Based on the results where for statement F, for shows the value of results as an element of institutional leadership according to table 8 related to shipping study programs, especially nautical, which is very much needed by 96% of self-development programs, soft skill competency development, knowledge development, skills development for nautical teaching lecturers. It really needs 96% policy planning, organizing, implementing, controlling sustainable professional competency development programs for nautical educators.

Table 8. Processed Data Statement F

Likert scale	Score	Score (%)
SD	0	0%
D	0	0%
A	3	4%
SA	76	96%
Total	79	100%

Based on the results where for statement G, for elements of institutional leadership (chairman and deputy chairperson) according to table 9 shows the result value. The continuous professional competency development model is suitable for Nautics teachers, with a background in nautical expert competency certification, 59% is needed by means of: apprenticeship on board as an officer, internship at a shipping company in the fleet management/operations/crewing section, internship at a logistics and freight forwarding company, internship at scouting, internship at a port company at the loading and unloading terminal, internship at a ship/shipyard repair and maintenance company, internship in the navigation division, apprenticeship in the maritime division, apprenticeship in the company's ship insurance division, apprenticeship in a classification bureau company, attending competence trainings, participating in skills training, attending special trainings. Time that much needed for the development of sustainable professional competence more or less in a period of 5 years.

Table 9. Processed Statement Data G

Likert scale	Score	Score (%)
SD	0	0%
D	40	10%
A	132	32%
SA	244	59%
Total	416	100%

From previous research, the urgency of the hard skills and soft skills aspects was in the good /important category with an average achievement above the criteria average, and an achievement score of 88.2% and 87.11%, respectively. Third, the ability aspects of hard skills and soft skills are in the good/important category with average achievement over the average criteria, and achievement scores of 72.81% and 74.11% respectively in the fairly high category (Wagiran et al, 2014). Based on the results where for statement E, the results of the Head of Quality Assurance Unit / Head of Quality Assurance Unit are obtained according to table 10 study programs for shipping, especially maritime, are needed 100% for self-development programs, soft skill competency development, knowledge development. As Head of Quality Assurance Unit/Quality Assurance Unit related to shipping study programs, especially nautical, it is urgently needed a 100% plan to improve the quality of sustainable professional competency development programs, preparation of sustainable professional competency development standards.

Table 10. Statement E Data Processing

Likert scale	Score	Score (%)
SD	0	0%
D	0	0%
A	0	0%
SA	48	100%
Total	48	100%

Based on the results where for statement G, for Head of Quality Assurance Unit/Head according to table 11 shows the value of the continuous professional competency development model suitable for Nautics instructors, with a background in nautical expert competency certification, 66% is needed by: apprenticeship on ships as officers, apprenticeships in shipping companies in the fleet management/operations/crewing section, internship at a logistics and freight forwarding company, internship at scouting, internship at a port company at the loading and unloading terminal, internship at a ship/shipyard repair and maintenance company, internship in the navigation department, internship in the maritime division, internship at a ship insurance company, internship at a company classification bureau, attending competency trainings, attending skills training, attending special training. The time needed is 66% for continuous professional competency development approximately once every 5 years.

Table 11. Processed Statement Data G

Likert scale	Score	Score (%)
SD	0	0%
D	4	1%
A	87	33%
SA	176	66%
Total	267	100%

Based on the results of statement C, to show the value of the results as the head of the lecturer group according to table 12 regarding shipping study programs, especially nautical, the characteristics of a nautical teacher are needed by 50% the ability to appear confident, with integrity, honest, caring, independent, initiator, willingness to learn, ability to collaborate. As the head of the teaching group related to shipping study programs, especially maritime, mastery of the soft skill competency possessed by maritime instructors is needed mastery in interacting/cooperating, respect, leadership attitude, communication skills, motivator, creativity, discipline, willingness to learn, collaboration skills. As the head of the teaching group related to shipping study programs, especially nautical, the characteristics of the knowledge possessed by nautical educators are needed by 50% conformity of nautical knowledge, ship engineering knowledge, port knowledge, sea transportation knowledge, general transportation knowledge, humanities knowledge, knowledge related to IMO, knowledge Informatics and Computer Technology, knowledge of E-Learning, knowledge of Distance Learning, knowledge of assessment and examination, knowledge of Learning Management Systems, and Academic Writing Techniques. As the head of a group of lecturers related to shipping study programs, especially nautical, the characteristics of the skills possessed by nautical teachers are needed with skills in instructional learning methods, skills in assessment and evaluation methods, skills in mentoring, skills in tutorials, skills in learning in the laboratory, skills in learning in simulators, skills in building networking with industry, skills in compiling research, skills in compiling teaching materials/books, skills in compiling journals, skills in management information systems, skills in making CBT (Computer Based Training), skills in making materials e-learning, the ability to make distance learning materials, academic writing techniques skills, video-making skills, textbook/module-making skills, textbook-making skills. So that nautical teachers need self-development, soft skill competency development,

knowledge development, skill development, lecturer initiation within 1 (one) year to take part in a continuous professional competency development program, nautical teachers who are responsive to changes in the learning curriculum or changes in IM O rules rules.

Table 12. Statement C data processing

Likert scale	Score	Score (%)
SD	0	0%
D	10	3%
A	201	50%
SA	188	47%
Total	399	100%

Based on the results where for statement G , for the head of the lecturer group according to table 13 it shows a very high result value 77% is needed for self-development programs, soft skill competency development , knowledge development.

As head of a group of lecturers related to shipping study programs, especially maritime, it is urgently needed by 77% of plans to improve the quality of sustainable professional competency development programs, setting standards for continuing professional competency development.

Table 13. Processed Statement Data G

Likert scale	Shoes	Shoes (%)
SD	0	0%
D	10	6%
A	126	77%
SA	28	17%
Total	164	100%

The results of the questionnaire distributed to the permanent lecturers of the Nautical Study Program, Diploma IV STIP, illustrate that there is a great need for continuing professional competence development for teaching vocational shipping in the Nautical Sector. As a subject educator professionalism as required by the Certification and Watchkeeping Training Standards for Seafarers (STCW) 1978 and its amendments, must have at least 1 level above the graduate candidate in the form of a diploma in the maritime profession and at least 2 years of sailing experience after having a diploma as an officer in charge of navigation on ships sailing in the ocean (ocean going) with a minimum size of 3,000 GT for deck officers or 3,000 kW for engine officers. For professional subjects at the management level, educators must have at least one year of experience teaching professional subjects at the operational level. All educators before being able to carry out learning, must follow a training program developed based on IMO 6.09. Practicum teachers or educators involved in laboratory learning must attend training IMO Training of Trainers (ToT) 6.10. For examiners, where all lecturers are also called examiners because they evaluate learning outcomes , they must have it.

During the first year after obtaining the ToT certificate IMO Model Course 6.09, instructor only may teach operational level subjects as an assistant instructor under the supervision of a senior instructor. This is of course very different from the qualifications of educators from the Ministry of Education and Culture which require one educators in higher education must hold at least a Masters (S-2) according to Law number 12 of 2012 concerning Higher Education. As with vocational education, of course the presence of professional teaching staff is needed. Understanding these problems, the Government issues policies through Regulations Minister of Research, Technology and Higher Education of the Republic of Indonesia No. 26 of 2016 concerning Recognition of Past Learning which is then translated into a Decree of the Director General Learning and Student Affairs Ministry of Research, Technology and Higher Education of the Republic

Indonesia No. 123/B/SK/2017 concerning Guidelines for Administration of Recognition Past Learning. Recognition of Prior Learning (RPL) is recognition of achievement learning for continuing education (RPL type A) and recognition of learning outcomes to be equated with certain qualifications (RPL type B). For educational staff, the regulations are relatively the same, namely they must have appropriate qualifications and experience in their respective fields of work. STIP educational institutions are obliged to organize development programs to increase the professionalism of educators and education staff. The program can be in the form of an orientation period for new teachers, school scholarships and training to support the implementation of their duties.

STIP educational institutions must also have policies related to staffing such as recruitment, promotion and termination; main duties, functions and responsibilities; rating system; Evaluation; salary/income arrangements; and employee code of ethics. The product of these results is a model of continuing professional competency development for vocational lecturers in vocational education at STIP. Taking into account the various procedures and processes that have been implemented, this model is named the "Continuing Professional Development (CPD)" model, with the reason that the development of professional competence for vocational lecturers will be carried out in a sustainable manner and motivate vocational lecturers to carry out their duties properly.

In line with research conducted by (Sujianto, 2013), that the continuous professional development of educator-certified teachers in technology-related vocational schools throughout Malang Raya is still relatively low, meaning that the majority of educator-certified teachers are only in the category of occasionally investing in self-development, scientific publications, and creating innovative works. either independently, in groups, or institutionally. Similar research was also stated by (Anggraeni & Rachmajanti, 2020) that teachers/lecturers need pedagogical competence in teaching, knowledge of student character, curriculum or syllabus, use of IT in teaching, student assessment, communication skills in class to learning approaches. It is also necessary to pay attention to the suitability and effectiveness of the Continuing Professional Development program. The results of the research conducted by (Azis et al., 2020) showed that: (1) The results of the descriptive analysis of non-formal supervision at SMPN Makassar are in the Very High category with a frequency of 15 people from 30 samples and or 50%. 2) The results of the descriptive analysis of the teacher's performance assessment in Continuing Professional Development are in the Very High category with a frequency of 11 people out of 30 samples or 36.66%. (3) The results of the inferential analysis comparing t-count and t-table, it turns out that $t\text{-count} = 2.137 > t\text{-table} = 2.048$, then H_0 is rejected and H_1 is accepted so that it is known that there is a significant effect between non-formal supervision (X) and performance teacher in Continuing Professional Development (Y).

CONCLUSION

Based on the findings of the CPD professional competence improvement model, it is necessary to implement models and evaluation processes in the development of human resources in a comprehensive and structured manner to achieve the expected educational goals. The result value of the continuous professional competency development model for lecturers is needed 47%, research and community service heads/head units are needed 47%, heads of study programs/departments are needed 61%, leadership elements (chairman/deputy chairperson) are needed 59%, heads/head units quality assurance is needed 66% and lecturer group leaders are needed 77% apprenticeship on ships as officers, apprenticeships at shipping companies in the fleet management/operational/crewling section , apprenticeships at logistics and freight forwarding companies , apprenticeships in scouting, apprenticeships at port companies at the terminal loading and unloading, apprenticeship at a ship/shipyard repair and maintenance company, apprenticeship in the navigation department, apprenticeship in the maritime division,

apprenticeship in a ship insurance company, apprenticeship at a classification bureau company, attend competency training, attend skills training, attend special training .

Based on the conclusions above, there are several suggestions for developing the Continuous Professional Development (CPD) model for vocational lecturers in the Nautical study program at the High School of Marine Science:

1. As a lecturer related to shipping study programs, especially Nautics, other skills that must stand out and be mastered, among them are teaching according to theory and practice, English language skills, vocational education requires lecturers to teach practice in workshops, laboratories and simulators, lecturers as leadship, budgeting which is planned to support the implementation of the Three Pillars of Higher Education, update the curriculum, strictly educate students, be able to write textbooks and make learning videos, and have the technical knowledge of writing scientific papers.
2. Lecturers independently/personally can develop continuous professional competence by continuing their further studies, participating in training/seminars/workshops internally and externally, making journals/research, industrial internships, utilizing learning media in the 4.0 era, namely the internet, YouTube and info news , become a member of the faculty organization.
3. Within 1 year, lecturers are advised to develop themselves independently/personally within 3 months, followed by compiling a research proposal once a year
4. The length of time for continuing professional competency development for Nautics instructors with a non-certified background in nautical expert competence is 12 months in a 5 year period.
5. Need budget planning from institutions related to research costs and community service.
6. The important role of Leaders and Head of Study Program who must be strong in compiling program organizations, implementing programs, and controlling the Nautical Teacher Continuing Professional Competency Development program at the Sekolah Tinggi Ilmu Pelayaran.

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