

RESEARCH ON INNOVATION IN TRAINING SECONDARY SCHOOL TEACHERS FOLLOWING THE COMPETENCY APPROACH TO MEET THE REQUIREMENTS OF THE 2018 GENERAL EDUCATION PROGRAM IN VIETNAM

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Abstract.

Research objective: To study the problem of teacher training and the model of teacher training following the competency approach. Research method: through selected documents that are closely related to the research task, we conduct retrospective analysis, summary, systematization of theories related to teacher training and the model of teacher training following competency approach, groups of documents are: (i) in Vietnam, we are interested in the innovative content of the 2018 general education program issued by the Ministry of Education and Training of Vietnam.; (ii) In 5 countries where education is developed, namely the US, Germany, Australia, France and the UK, we look at how they have developed a source of quality teachers. Research results: The study suggests how the Vietnamese education sector should do: (1) Raise awareness about the role and importance of professional development for secondary school teachers in the context of educational innovation in Vietnam; (2) Renovating the direction of the Ministry of Education and Training for the training of secondary school teachers; (3) Develop a process for training secondary school teachers in accordance with the proposed competency framework to meet the requirements of the 2018 general education program in Vietnam; (4) Directing the renewal of training forms, programs, contents and methods for secondary school teachers; (5) Completing the coordination mechanism to manage professional capacity building activities for secondary school teachers.

Keywords: Teacher training, educational innovation, competency approach, secondary school teachers.

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1. INTRODUCTION

The context of Vietnamese social and human development in the information technology era, international integration and globalization are promoting the innovation of education and training. To fundamentally and comprehensively renovate education and training following the development needs of society.

The project on fundamental and comprehensive renovation of education and training to meet the industrialization requirements of modernization in the socialist-oriented market economy and international integration was promulgated in Resolution No. 29/NQ/TW on November 4, 2013 of the 8th Conference of the Central Executive Committee, term commented on the educational situation: "..., the quality and effectiveness of education and training are still low compared to requirements, especially higher education and vocational education. The education and training system lacks linkages between levels and between education and training modes; heavy on theory, light on practice, still. Training has not been linked with scientific research and the needs of the labor market, and has not paid enough attention to ethics, lifestyle and work skills education. The educational methods, the examination, testing and evaluation of results are outdated and lacking in substance (MOET, 2018).

The project on fundamental and comprehensive renovation of education and training identifies the objectives of reforming general education, focusing on intellectual and physical development, quality formation, citizenship capacity, discovery and fostering, nurturing talent and career orientation for students. Improve the quality of education comprehensively, focusing on educating ideals, traditions, ethics, lifestyles, foreign languages, informatics, competencies and

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practical skills, and to apply knowledge into practice. Develop creativity, self-study, encourage lifelong learning. To ensure that students with secondary school qualifications have knowledge, basic general meeting requirements of strong streamlining secondary school; High schools must approach careers and prepare for quality post-high school education (Trung, P.Q., Hoan, T.H. 2019; Nguyen TPL, Nguyen TH, Tran TK. 2020; Huong, H.T. 2021; Tinh, T. T. 2021).

With the above innovation goal, the Project has identified the tasks and solutions implementation, which affirms: "Continue to strongly and synchronously innovate the basic elements of education, continue training in the direction of developing qualities and abilities of learners. On the basis of the goal of education and training innovation, it is necessary to clearly define and publicize the objectives and output standards of each level, subject, program, training and specialization. Consider commitment to ensure the quality of the whole system and each educational and training institution; is basis to monitor and evaluate the quality of education and training. Renovating the program in order to develop learners' capacity and quality, harmonize virtue, intelligence, body, beauty, literacy, human and vocational training. Renovate educational content towards streamlining, modernity, practicality and suitable for ages, levels and professions; increase practice, apply knowledge into practice. Focus on educating personality, morality, lifestyle, legal knowledge and civic consciousness. Develop and standardize general education content towards modernity, leanness, quality assurance, high integration in lower classes and gradual differentiation in upper classes; reduce the number of compulsory subjects, increase elective subjects, topics and educational activities... Strongly renovate the contents of undergraduate and postgraduate education in the direction of modernity, suitable for each discipline and group of disciplines. Focusing on developing creative capacity, practical skills, creative ethics and social understanding, step by step approaching the world's advanced science and technology level. About teaching methods "Continue to strongly innovate teaching and learning methods towards modernity, promote positivity, proactiveness, creativity and apply knowledge and skills of learners; overcome the one-way imposition of transmission and memorization. Focusing on teaching how to learn, how to think, encouraging self-study, creating a basis for learners to update and renew knowledge, skills, and capacity development. Shift from studying mainly in class to organizing diverse learning forms, paying attention to social activities, extracurricular activities, and scientific research. Promote the application of information and communication technology in teaching and learning" (MOET, 2018).

Regarding the development of a contingent of teachers and administrators to meet the requirements of education and training reform: "Elaborate planning and training plans, fostering a contingent of teachers and educational administrators associated with the needs of socioeconomic development, assurance of security, national defense and international integration. Standardize the contingent of teachers following each educational level and training level. Towards all primary and secondary school teachers, teachers and lecturers of vocational education institutions must have university degrees and have pedagogical capacity. College and university lecturers having a master's degree or higher and must be trained and fostered in pedagogical skills, etc. To develop a system of pedagogical schools to meet training objectives and requirements, and to foster teaching teachers and educational administrators; to prioritize investment in building a number of key pedagogical schools and technical pedagogical schools; overcome the dispersion in the system of teacher training institutions. Strongly renovate training objectives, content, and methods of training, re-training, fostering and evaluating teachers' learning and training results following the requirements of improving quality, responsibility, ethics and profession capacity." (MOET, 2018; Trung, P.Q., Hoan, T.H. 2019; Tinh, T. T. 2021).

In 2018, the Ministry of Education and Training issued the General Education Program in Circular No. 32/2018/TT-BGDDT on December 26, 2018, similar to primary and high school education programs, secondary education has many new features.

Secondary education program helps students develop the qualities and competencies that have been formed and developed at the primary level, adjust themselves following the general standards of the society, know how to apply different methods of teaching and learning. Active learning methods to complete foundational knowledge and skills, have initial understanding of professions

and have a sense of career guidance to continue to high school, learn a profession or participate in the working life.

According to Circular 32/2018/TT-BGDDT: "The secondary education program helps students develop the qualities and abilities that have been formed and developed at the primary level, self-adjusting according to common standards of society, know how to apply active learning methods to complete foundational knowledge and skills, have initial understanding of professions and have a sense of career guidance to continue to learn in high school, learn a profession or engage in working life".

Regarding the educational program: Compared to the 2006 program, the 2018 secondary program has integrated some subjects such as History and Geography; Natural Sciences; Technology; Arts (Music, Fine Arts). Thus, it is necessary to train secondary school teachers to meet requirements of these new subjects. In order to train a team of secondary school teachers appropriately, meeting the requirements implementing secondary education program starting from the school year 2021-2022, teacher training institutions need: training program; framework of training capacity standards (output standards), training organization MOET 2018; Trung, P.Q., (UNESCO 2017; Hoan, T.H. 2019; Nguyen TPL, Nguyen TH, Tran TK. 2020; Huong, H.T. 2021).

2. METHODOLOGY

Research objective: Research and build a theoretical basis for teacher training and teacher training model following the competency approach.

Methods of data collection and analysis: through selected documents that are closely related to the research task, we conduct retrospective analysis, summary, and systematization of theories related to teacher training and teacher training model following the competency approach, group of documents are: (i) in Vietnam, we are interested in the innovative content of the 2018 general education program by Vietnam Ministry of Education and Training; (ii) In 5 countries where education are developed, namely the US, Germany, Australia, France and the UK, we look at how they have developed a source of quality teachers.

3. HISTORY OF TEACHERS TRAINING RESEARCH

3.1. Research on teacher training in some developed countries

In America

There are many research works on teacher training through different periods and eras, synthesizing content from a number of research works by author Christopher J. Lucas with the book Teacher Education in America: Reform Agendas for the Twenty-First Century, the group of authors Karen Symms Gallagher, Jerry D. Bailey with the work: The Politics of Teacher Education Reform: The National Commission on Teaching and America's Future have researched and paid attention to the important influencing factors to teacher training. The teacher training program in the US is very diverse, multi-structured, with many different views on the content ratio of training programs and the location of teacher training institutions. There are two types of teacher training programs: 4-year and 5-year training programs depending on the regulations of each state. In the mid-1980s, the key findings in the report of the Holmes group the Dean of the Faculty of Education at Harvard University in the 1920s and 1940s - were that quality teacher training programs should have: 1) A bachelor's degree in a relevant discipline, followed by one year of pedagogical and practical student teaching, and 2) Teachers should not be guaranteed a permanent teacher position if they are unable to perform a thorough understanding of their expertise (Brockmann, M., Clarke, L., & Winch, C. 2008; Chishimba, C. P. 2001; Makulova, etc., 2015).

Cary J. Trexler (2011) when researching teacher training in the US also emphasized the licensing of teachers to practice through organizations (e.g. NCATE) or teacher accreditation committees (e.g. CCTC in California) with tools that are common standards including Educational Leadership standards; Comment and evaluate the course and training program; Resources; Teaching staffs; Practical experience and practice;

In addition, in teacher training in the US, posttraining professional guidance programs are also paid special attention through training programs to support and evaluate trainee teachers with standard sets of teacher support programs.

In the Federal Republic of Germany

In Germany before 2000. Summary of a number of research works in which the study on Professionalization and diversity in teacher

training by author Jörn Schützenmeister has clearly outlined the work of teacher training in the first period in Germany before 2000. Similar to the US, teacher training in Germany is under the responsibility of the states, there are also differences. However, the regular Conference of Ministers of Education and Culture has resulted in a fairly high degree of consensus to ensure mutual recognition of qualifications in teacher training in all states (Brockmann, M., Clarke, L., & Winch, C. 2008; Chishimba, C. P. 2001).

Teacher training in Germany since 2000. Author Anett Grießer in his research Models of German second-stage teacher training: Positions of vocational school teacher associations, Education Union, Science and Education, Vocational Education and Training (Das Modell der deutschen zweiphasigen Lehrerausbildung: Kritik Reformansätze: Die Positionen und Berufsschullehrerverbände, der Gewerkschaft Erziehung und Wissenschaft und der Sektion) About the model of teacher training in the reform since 2000 to implement the Bologna process is to carry out teacher training in two successive stages of Bachelor and Master. The basic provisions of the Bologna process regarding the duration of university training and credits according to the ECTS (European Credits Transfer System) system, that is, the European credit transfer system of these two levels are: Bachelor level (European Credits Transfer System) Bachelor), training time from 6-8 semesters, corresponding to 180-240 credits (each semester corresponds to 30 credits). Master's degree (Master): from 2-4 semesters, equivalent to 60-120 credits. Total training time for both levels to achieve master's level is 10 semesters, equivalent to 300 credits.

In Germany there are the following types of teachers: 1) Primary and primary school teachers; 2) Primary school teachers and all or specific types of secondary schools; 3) Teachers for all or specific types of secondary schools; 4) Teachers of high school (general subjects) or Gymnasium; 5) Teachers of high school (vocational subjects) or Gymnasium; and 6) Special Education Teacher.

Stages in teacher training: 1) Pedagogical practice; 2) Train trainee teachers. As in the US, teacher training in Germany emphasizes the accreditation of teacher training institutions through the toolkit of standards.

In Australia

Authors group David E. Lynch, Tony Yeigh published the work: Teacher Education in

Australia: Investigations into Programming, Practicum and Partnership. The author has stated the training models of secondary school teachers as follows:

Concurrent Programs: Concurrent teacher training programs are programs in which the content of subjects is taught and the theory and practice of teaching those subjects are learned simultaneously, or called learning at the same time.

Integrated Bachelor of Education (secondary teaching): The Bachelor of Education curriculum requires the completion of a major (usually account for one-fourth of a three-year university program) in one field of study and at least one minor (1/6 of the program's volume in a three-year university) in a second area of teaching. These content and subjects are combined with a major specialized subject of educational theory and practice. Both of these components are typically taken over all four years of the program. The third component, school internships or teaching practice, is also spread out over the course of four years, increasing in volume with each year of the program. The amount of activity at a high school typically varies, but typically ranges from 80 to 100 days.

Dual-degree teacher training: Dual-degree teacher training is organized for subjects who are studying a major discipline and then organizes training for subsequent modules related to education and pedagogical science, teaching, for example: Bachelor of Social Sciences/Bachelor of Teaching; Bachelor of Science/Bachelor of Teaching... The dual degree teacher training system is quite popular in Australia (Chishimba, C. P. 2001; Hodge, S. (2007).

In the French Republic

In the Report of Marie MEGARD, Marie Blanche MAUHOUTAT, the national inspector general of education to the Ministers of National Education and the Ministry of Higher Education and Research on Universities Pedagogy Education: Evolution et Etat des lieux des moyens mis en oeuvre pour la formation des enseignants pointed out that the development of teacher training institutions in France can be considered in two main phases. In the past, education was reserved for a minority of society and was provided by monks and tutors from aristocratic and wealthy families. The French Revolution in 1789 brought many changes in French society and one of them was the decision to establish the first teacher training school in Paris. This profoundly changed the education system of that time. The announcement of the establishment of the school stated. "The School of Education will be established in Paris and invite all French citizens, knowledgeable in science to study at the school. The students of the school will be trained under the teaching of the best professors in the field, in the art of teaching" (according to the Constitution - Convention 1794). This Pedagogical School was the forerunner of the pedagogical university (École Normal Supérieur/ENS) which today are the four famous French schools of basic science and educational science, ENS Paris, ENS Cachan, ENS Lyon and ENS LSH Lyon. The next stage of development in teacher training in France:

In 1833, the Law of Guizot (taking its name from François Guizot then Minister of Public Education-Ministre de l'Instruction publique) on establishing in each commune-level administrative unit a primary school and a pedagogical school training primary school teacher for each provincial administrative unit.

In 1880-1883, the Ferry Laws (named Minister of Education of this period) mandated universal education from 6 to 13 years old (1882) and free education (since 1881), teaching religion was abolished and replaced by moral teaching and civic education (1882). The Paul Pert Law of 1879 established the conditions that spurred the important development of primary school teacher training schools. It was these laws that laid the basic foundation for education in France to this day.

In 1989, the Institute of Higher Education for Teachers (IUFM: Institut Universitaire de formation des maitres) was established to replace the pedagogical schools. In each regional administrative and educational unit (académie), the Teacher Training University Academy has the task of training elementary and high school teachers (middle school, high school, general education, technical or vocational) as well as the training of pedagogical advisors (Chishimba, C. P. 2001; Hodge, S. 2007; Brockmann, M., Clarke, L., & Winch, C. 2008; Chishimba, C. P. 2001).

In the United Kingdom

In the "Report on teacher training" of the Great Britain Committee on Children, Schools and Families (Great Britain. Parliament House of Commons. Children, Schools and Families Committée) proposed References to teacher training models in the UK are particularly diverse and varied. There are many paths to becoming a teacher, candidates can participate in other teacher training programs in different ways.

Some models of teacher training in the UK are as follows:

- -Training teachers before graduating from university: Training teachers for learners who are completing a degree training program: Bachelor of Education; Bachelor of Social Sciences or Natural Sciences with the title of qualified teacher (Bachelor of Arts, Bachelor of Science).
- -Training teachers after graduating from university. For those who already have a university degree, train to become a teacher in 1 or 2 years. After that, they will obtain a Post Graduate Certificate of Education (PGCE).
- -Train teachers according to recruitment standards. Standard training and certification of a teacher while working in a high school: College Teacher Training Program (GTP), Teacher Registration Program (RTP).
- -Teacher training based on assessment. If the learner has substantial teaching experience but is not a qualified teacher (QTS) title in the UK, it may be considered for assessment-based training.

3.2. Research on teacher training in Vietnam

In recent years, the number of scientific researches on teacher training has also increased, but the majority of them are at the level of reference materials for teaching and learning, articles or scientific reports at universities scientific conferences and have not been studied in depth.

In the conference "Developing training programs and fostering high school teachers according to the professional standards of high school teachers", author Vu Thi Son has an article "Development of a teacher training program to meet professional standards" has outlined theoretical and practical grounds for building teacher training to meet professional standards.

The theory includes the following issues: 1) Competence in teaching profession; 2) Competence required for teachers to perform professional activities; 3) The process of learning and developing professional competence of teachers that goes through many stages of development with its own characteristics; 4) Teacher's professional competence is one of the factors determining the quality of education; 5)

Teaching profession exists in society with its own identity;

In practice: 1) Professional standards for middle and high school teachers promulgated by the Ministry of Education and Training in 2009; 2) The initial training of the teacher training process can be applied from level 1 of the Professional Standards; 3) Training and retraining work is not oriented towards standards but towards innovations.

Author Tran Khanh Duc with the article "Development and evaluation of teacher training programs in modern education" in the conference proceedings "Innovation of teaching methods and assessment methods for general education, pedagogical colleges and universities", mentioned 6 program evaluation criteria: 1) Goal orientation; 2) Systematic; 3) Modernity; 4) Efficiency; 5) Feasibility; and 6) Ability to continuously update and evaluate during implementation.

In 2000, in the ministry-level project "Research and build a model for training technical teachers at university level for professional and vocational high schools", author Nguyen Duc Tri proposed training models for technical teachers in which the philosophy and basic characteristics are mentioned; advantages and disadvantages of competency-based training and its application in teacher training in Vietnam.

My Giang Son's PhD thesis in Education Management in 2014 "Management of pedagogical internships in the training of high school teachers in accordance with the professional standards of high school teachers" proposed solutions to manage pedagogical internships in the training of secondary school teachers according to the professional standards of high school teachers.

In 2013, the Project to develop high school and professional secondary school teachers of the Department of Higher Education-Ministry of Education and Training published "Output standards for university level in pedagogy in high school teacher training" to introduce to higher education institutions training high school teachers at university level in Pedagogy, for reference when developing and publishing the output standards of Pedagogy majors. This book orients specifically for teachers to concretize teaching goals and contents, create a standard curriculum framework to design output standards,

so that learners know what competencies they must achieve upon graduation and to serve as a basis for training management and quality assurance of training programs.

In 1996, author Nguyen Duc Tri chaired the implementation of the ministerial-level project on "Access to vocational training based on performance and building vocational standards". This can be considered as a relatively comprehensive study on the vocational training system by competency implemented in Vietnam. The topic has contributed to clarifying the theory of training methods based on performance, especially the stages of program development and national standard of vocational skills.

A number of PhD theses related to performancebased training have been carried out such as: the thesis of Nguyen Quang Viet (2006) on "Testing and assessment in teaching practice according to the performance competence approach", the thesis of Vu Xuan Hung (2011) on "Strengthening teaching capacity for university students of technical pedagogy in pedagogical practice by approach to performance"; Cao Danh Chinh's thesis (2013) on "Teaching following the performance approach in technical pedagogical schools"; the thesis of Le Thuy Linh (2013) on "Teaching pedagogy in pedagogical universities following the approach to performance"; Pham Thi Thuy Hong's thesis on "Management of vocational training following the approach to performance in vocational colleges" etc. These theses refer to the application of competencybased training methods in teaching for vocational students and pedagogical students.

The PhD thesis of Nguyen Ngoc Hung "Innovative solutions for practical teaching and learning management according performance approach for students of technical pedagogy", the author has proposed solutions for management innovation with core basis, which has a direct impact on teaching and practice process, has been implemented in order to improve the performance capacity of students of Technical Pedagogy. Each of the proposed solutions contains problems and basic contents that are systematic, interrelated, and interact with each other and are all based on the theory of training management approach.

The research works on training art and art teachers have some typical works such as the ministeriallevel research project of the project leader Pham Le Hoa in 2009: "Solutions to improve the quality of the teaching music teachers in secondary schools in the North of Vietnam" code B2008-36-09, this research has presented the current situation of the quality of music teachers in the Northern region of Vietnam, on the basis of evaluating the advantages and limitations, the author has come up with some solutions to improve the quality of music teachers; In 2011 the author also had an article: "Vietnamese traditional music and music teacher training at the Central University of Arts and Education" in the Art Education Magazine No. 5/2011;

Author Trinh Hoai Thu with a ministerial-level research project, code: B2010-36-23 on "Research and compilation of music theory documents for the University of Music Pedagogy" is a study or reference material used for students studying at University of Music Education and ministerial-level research project in 2015 code B2015-36-27: "Solutions to improve artistic competence for music teachers and Fine Arts in high schools and secondary schools in the North of Vietnam to meet the requirements of educational innovation in Vietnam", the main content of this work is to state the current situation of professional competence of music teachers in schools and from which the author proposes specific solutions to meet the renovation work in education and training in Vietnam in the current period;

4. EXCHANGE AND DISCUSSION

According to the above, there are many different views on the trend of training innovation in world education. Research works, documents on teacher training management, we have found that, these documents focus on higher education program research with program theory, or a component part of the managing process and train new teachers at the level of monographs, study materials, articles or scientific reports at conferences and scientific conferences. However, there is no comprehensive research on teacher training management, especially teachers at secondary school level.

It can be said that human resource training based on human resources approach is a training method that is not new to the world but has just been applied to training practice in Vietnam. This application has been applied in many different training professions, however, in the current context of Vietnam's educational innovation, as well as the advantages of training based on human resources approach, it is necessary to apply more

widely. Training secondary school teachers according to competency approach is a new direction, contributing to the effective implementation of training for middle school teachers in the context of current educational innovation in Vietnam. During the research process, the author inherited and compared the views in the research works to carry out the research.

Therefore, in order to improve the quality of teacher training to meet the current educational innovation requirements in Vietnam, we offer the following suggestions:

- -Raise awareness about the role and importance of professional capacity development for secondary school teachers.
- Renovating the direction of the Ministry of Education and Training for the training of secondary school teachers.
- -Develop a process to train secondary school teachers in accordance with the proposed competency framework to meet the requirements of the 2018 general education program in Vietnam.
- -Directing the renewal of forms, programs, contents and methods of training for secondary school teachers.
- Improve the coordination mechanism to manage professional capacity building activities for secondary school teachers.

5. CONCLUSION

We realize that training following the needs of socio-economic development is considered a development-oriented perspective and evaluates the quality of education and training. Furthermore, standardization, socialization, democratization and international integration are required as principles to evaluate the quality of education and training. These are important strategic directions for building a professional education and training and integration. Research has analyzed synthesized documents on training secondary school teachers in Vietnam and in 5 countries, from which, the research has suggested 5 contents that need to be done to help the process of training middle school teachers in Vietnam to meet the requirements of the 2018 General Education Innovation Program. Specifically, these include: (1) Raising awareness about the role and importance of professional development for teachers in secondary schools in the context of innovation educational in Vietnam: Renovating the direction of the Ministry of Education and Training for the training of

secondary school teachers; (3) Develop a process for training secondary school teachers in accordance with the proposed competency framework to meet the requirements of the 2018 general education program in Vietnam; (4) Directing the renewal of training forms, programs, contents and methods for secondary school teachers; (5) Completing the coordination mechanism to manage professional capacity building activities for middle school teachers. The coordination mechanism for managing professional capacity building activities for middle school teachers.

REFERENCES

- 1. Brockmann, M., Clarke, L., & Winch, C. (2008). European systems of vocational education and training (VET): convergence or divergence? The Cases of England, France, the Netherlands and Germany. Paper presented to the Industrial Relations in Europe Conference, University of Greenwich, June.
- Chishimba, C. P. (2001). Content-Based Teacher Education Approach versus Competence Based Teacher Education Approach Prospects. Quarterly Review of Comparative Education, XXXI (2), 229-238.
- 3. Hoan, T.H, Tuan, K.M. (2021). Using the PLS-SEM model to evaluate the satisfaction level of ethnic minority group school leaders on e-professional development program. Journal of Education Management, Vietnam, Vol. 13, No. 9A, pp. 1-7,
 - DOI: 10.53750/1859-2910.2021.13.9A-1
- 4. Hodge, S. (2007). The origins of Competency-Based Training. Australian Journal of Adult Learning, (47), 179–209.
- 5. Huong, H.T. (2021). Research on teacher training in some countries and lessons for Vietnam. Journal of Education Management, Vietnam, Vol. 13, No. 1, pp. 12-18.
- 6. International Bureau of Education: UNESCO. (2017) The Why, What and How of Competency Based Curriculum Reforms: The Kenyan Experience. Current and Critical Issues in Curriculum, Learning and Assessment In-Progress Reflection No. 11, 1-24.
- 7. Makulova, Aimzhan Tulegenovna; Alimzhanova, Gaukhar Mukhtashevna; Bekturganova, Zhanar Mustafaevna; Umirzakova, Zaure Asetovna; Makulova, Laura Tulegenovna; Karymbayeva, Kulzinat Meirambaevna (2015). Theory and Practice of Competency-Based Approach in Education. International Education Studies, v8 n8 p183-192, ISSN: ISSN-1913-9020

- 8. MOET Ministry of Education and Training of Vietnam (2018). The project on fundamental and comprehensive renovation of education and training the objectives of reforming general education.
- 9. Nguyen TPL, Nguyen TH, Tran TK. (2020). STEM Education in Secondary Schools: Teachers' Perspective towards Sustainable Development. Sustainability. 12(21):8865. https://doi.org/10.3390/su12218865
- 10.Tinh, T. T. (2021). Research on autonomy and accountability of high schools in Vietnam. International Journal of Linguistics, Literature and Culture, 7(6), 459–467. https://doi.org/10.21744/ijllc.v7n6.1946
- 11. Trung, P.Q., Hoan, T.H. (2019). Proposing quality criteria of managers of upper secondary school in the context of educational innovation. Journal of Education Management, Vietnam, Vol. 11, No. 6, pp. 1-9