Human Development for Water Management Research

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Abstract

The human development for water management research has objectives of this research as follow: (1) develop personnel to have knowledge related to water management, (2) create a network of cooperation in spatial work on water management in Phayao province, and (3) create a network of cooperation in spatial work on water management in Phayao province. This is a documentary research study on human resource development, detachment of knowledge, knowledge management, and learning to create a positive impact on the development of personnel in water management. Key informants include researchers in water management projects for fiscal year 2019 and 2020 of at least 10 people. The research tool was an in-depth interview and focus group. Data analysis used content analytics to build knowledge sets. There are 6 theoretical contexts as addressed in the conceptual framework with 14 interview questions. The results of this research found that of the 17 interviews there are 9 research assistants and 8 researchers. Those who are experienced researchers said that they gained their knowledge prior this research from the part research and through their teaching. While those research assistants gained their knowledge from their class during the undergraduate studies as well as the post-graduate studies. It also found that the knowledge that the research assistants had previously can be applied and improved in accordance with this research. Thus, the research assistants can adjust and apply their knowledge together with the acquisition of new knowledge in this research work.

Keywords: Human Development, Water Management, Knowledge Management

Introduction

University of Phayao has a policy to develop academic personnel in the field of research. It aims to encourage personnel to seek research funding both internally and externally. The university support in the administration on the budget coordination as well as planning the operation in three phases: (1) upstream, (2) midstream, and (3) downstream. As a result, many research teams have come together to propose large research projects such as in tourism, agriculture, energy and environment issues, and science. Each group is working in their field in requesting a budget for conducting research so called research project series. However, in the current research grant applications, research teams from diverse disciplines such as science, environment, management, sociology, law, fisheries, geography, etc., come together to write the series of projects. These are to find answers in conducting research because currently doing a research project will not be able to operate by a single discipline as in the past. This leads to the proposed of research series such as a series of projects related to lychee, fattening cattle or water management, etc. Accordingly, for the project series

related to water management, it is a series of research projects that bring together researchers from various disciplines, such as biology, fisheries, geography, tourism, political science, energy, environment, engineering, and law[1].

The past research operations of projects related to water management in fiscal year 2019 consisted of 10 projects. Whereas the project in fiscal year 2020, consisting of 11 projects, the project has been a continuous work for two years. Furthermore, it is likely that the third phase of action is necessary, namely the fiscal year 2021. The water management project focuses on solving the water management in the past, forecasting future use as well as formulating important policies on the use of water for agriculture of Phayao province as well as the Ing River Basin that is part of the Northern Mekong Basin[2].

Research results require the development of researchers or personnel in water management from various fields. This includes developing research articles to be well-accepted in the academic society whether publishing nationally or internationally. Additionally, it is important for the researchers to seek for alliances of knowledge both within and outside the country such as the study visits to build knowledge sets and mutual understanding in conducting research or research collaborations in the future. Therefore, the development of research personnel on water management matters in two dimensions namely: (1) The first dimension in a series of projects submitted for research funding, there are 6 major fields of knowledge, namely science, environment, geography, political science, engineering, and economy. The research team has not known whether there will be any other related sciences. Hence, in this dimension to create a new set of knowledge; (2) the second dimension is seeking new researchers from other disciplines to learn together and conduct research in the future or develop the coaches as well as to develop a research team (including bachelor's degree, master's degree, and doctorate degree students). Another dimension is the development of researchers to be ready to develop water management research projects.

RESEARCH OBJECTIVES

The objectives of this research are as follows.

1. To develop personnel to have knowledge related to water management.
2. To create a network of cooperation in spatial work on water management in Phayao province.
3. To create a network of cooperation in spatial work on water management in Phayao province.

Literature review

Learning Theory

Learning is the process by which people change behaviours, thoughts, and learn through hearing, touching, reading, and using technology. The learning of children and adults is different. Children learn through classroom learning and asking questions while adults often learn from experience. But learning takes place from the experience of the teacher presentations. It is also created by the interaction between the teachers and the learners. Instructors create a conducive psychological atmosphere for learning that could occur in any form such as sociability strictness or lack of discipline. These are the conditions that the teacher will create the learning situations for learners. Thus, teachers must consider choosing a teaching style including creating interactions with learners[3].

Bloom's Taxonomy

Bloom has divided learning into 6 levels as follows:

1. Knowledge arising from memory (knowledge), which is the lowest level,
2. Comprehend,
3. Application,

4. Analysis is the ability to solve problems and recheck,

5. Synthesis can bring different parts as well as can be assembled in a new form to be different from the original image. It emphasises on new structure,

6. Evaluation is measurable and determines what is right or wrong. To be able to make decisions based on rationale and definite criteria.

Important elements that contribute to learning from the idea of an educator Gagne.

1. Learners have a touch system and perceptual nervous system,
2. Stimulus is a situation. which are what motivating students to learn,
3. Response is a behavior arising from learning.

Knowledge Management

Definition of Knowledge Management

Knowledge management is a process that helps collect, store, analyze and formulate issues, as well as disseminate knowledge. It is useful and necessary for the development and progress of the organization[4]

The aim of knowledge management

The main goal of knowledge management is to make use of the body of knowledge that has been collected, stored, analysed, and formulated. It includes the dissemination of knowledge for efficiency and advancement of the organisation through the support of computer technology and information to collect and distribute. The general purposes of knowledge management are as follows:

1. To make the organization realize the importance of knowledge that exists in the individual and in the organization by applying the knowledge for maximum benefit and efficiency both in terms of work and lifestyle.

2. There is the introduction of computer and information technology to be applied in knowledge management systematically.

3. To create, develop, and improve the infrastructure within the organization by applying the knowledge gained from knowledge management to be useful.

Type of knowledge

Knowledge can be divided into two types of explicit knowledge and tacit knowledge or deep-seated knowledge. Explicit knowledge is knowledge that can be described in words such as manuals, books, journals, etc. As for tacit knowledge, it is knowledge that is embedded in most people. It is characterised as latent knowledge, possibly in people working in different organisations or departments and specialists in each field; therefore, it requires a mechanism for exchanging knowledge, which is ‘knowledge management’.

Tuna Model Knowledge Management Concept

The Tuna Model is a simple conceptual framework that is not very complex. It is appropriate to use as a guideline for the implementation of knowledge management by giving knowledge management like a fish. It consists of the head, torso, and tail, each of which has different functions as follows:

1. Head and eyes (Knowledge Vision - KV) see where it's going. Which must be answered, "What are you doing KM for?"

2. The middle of the body (Knowledge Sharing – KS) The heart part has given importance to the exchange of knowledge and assistance. support each other.

3. The tail (Knowledge Assets – KA) is to build a knowledge repository. network link Applying “Flick Tails” information technology to create power from the practice community.

Knowledge management is a tool to create, collect, analyse, and synthesize. It includes disseminating knowledge for efficiency and advancement of the organisation. This will enable the organisation to achieve its objectives with efficiency and effectiveness. Knowledge may come from written knowledge such as books, textbooks, etc., as well as knowledge derived from individuals such as specialists. village sages, etc.

Project Evaluation

The project evaluation is considered a new concept and technique for Thailand and the field of education. Project assessments have come into play in the study for about 15 years ago.[5] The project evaluation starts with the ideas presented in the form of articles by Ralph Tyler, Lee J. Cronbach, and Michael Scriven. In Thailand, the taught course of project evaluations is interpolated in fields such as management, etc. As assessment techniques have expanded and developed, there are components of knowledge in both conceptual and technical assessment methods. Consequently, it has been taught as separate courses in the master's and Doctoral degree programs in Educational Measurement and Evaluation, which had previously been inserted in the subject of educational measurement and evaluation [6]).

Currently, project evaluation is not limited to educational purposes only, but expanding into projects in various fields so extensively that assessment is another business career. Because in evaluating various projects of an organization, agency or institution, a huge budget is required. Therefore, an expert is required to be an evaluator to bring the results worthwhile to use in the future.

The primary objective of the project assessment is information that indicates whether the project being implemented is meeting its intended objectives or is it worth deciding whether to implement it. This includes the study of what problems in the project implementation that need to be improved, changed, or corrected and how valuable the project is.

Project evaluation refers to the process that produces information for project improvement. and information to judge the project's achievement [7]). While [8] defines project evaluation as the process of collecting and analyzing information systematically to conclude that a project has achieved its objectives/goals. and how effective it is.

The concept of human resource management in the new era

From the current capitalism that has an important influence on management in all sectors be it business sectors, state enterprises or government agencies and educational institutions. They are influenced by capitalism and must adjust their own management to compete and create organizational growth. In the government sector and educational institutions, it is necessary to adjust the management of their own organization in terms of service as well to meet the increasing demand of the private sector. In this era of capitalism organizations with more capital are considered to have advantages over other organizations. After the end of the 20th century, the concept of operating capital has been interpreted beyond the meaning of finance, resources, management, and technology.

Therefore, human resource management is a management that all levels of executives in the organization need to be involved inevitably. Human resource management in this era is therefore an important task of executives at all levels who must work closely with human resource personnel in their organizations. To plan and operate to create potential personnel and create maximum productivity for the organization. Human resource management in this era is therefore an important task of executives at all levels who must work closely with human resource personnel in their organizations. To plan and operate to create potential personnel and create maximum productivity for the organization. In addition, the focus on personnel in terms of capital to generate income and growth of the organization.

Hence, human resource management in the new era requires a change in the roles of relevant stakeholders, including employees, supervisors, executives, and human resource personnel. This requires more joint missions instead of clear separation of duties and management will give more importance to personnel with potential. This allows human resource management to be designed to be flexible and easily adaptable. This concept is therefore not different from the concept of management. A

fast-paced business that doesn't rely on method- or process-oriented management rather than result-oriented.[9]

Research Framework

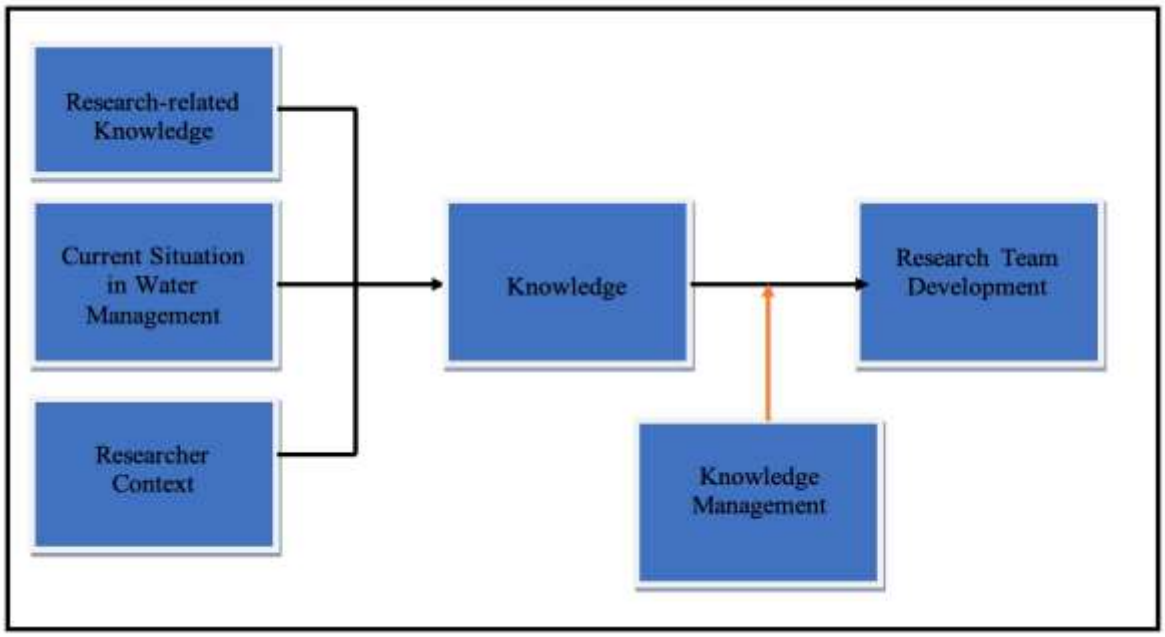

Figure 1 Research Framework

Methodology

This is a documentary research study on human resource development, detachment of knowledge, knowledge management, and learning to create a positive impact on the development of personnel in water management. Extracting research knowledge on water management emphasis is on in-depth interviews and group discussions, with the aim of acquiring a knowledge set of water management, conducting research, and creating a body of knowledge in research.

Key informants include researchers in water management projects for fiscal year 2019 and 2020 of at least 10 people. The research tool was an in-depth interview and focus group. Data analysis used content analytics to build knowledge sets.

Research team building process:

1. Training on transferring knowledge in conducting research to team researchers and new researchers.
2. Research article writing training for team researchers and new researchers.
3. Study tour for team researchers and new researchers' data analysis uses content analysis.

Findings and Discussion

According to the research theoretical contexts and research questions can be concluded as shown in table 1. There are 6 theoretical contexts as addressed in the conceptual framework. The researchers had 14 interview questions, which can be categorized as shown below.

Table 1

The Research Theoretical Context and Research Questions

Research Theoretical Context	Research questions
1. Research-related Knowledge	2. Research experience 5. Research assistant recruitment process e.g. qualification criteria
2. Current Situation in Water Management	1 Position 2. Research experience
3. Researcher Context	5. Research assistant recruitment process e.g. qualification criteria
4. Knowledge	3. The research knowledge gained prior this research 4. Knowledge transferring to research assistants
5. Knowledge Management	4. Knowledge transferring to research assistants 7. Methods in measuring the work success 9. If you can reverse the process, how would you distribute the knowledge to the research assistants 10. What is the knowledge learning process that research assistants gain from the research team leader 11. Do you gain enough knowledge to be a research assistant 12. What is your self-development for the success of your research project 14. If you can reverse the time to the beginning of this research project, what would you like to do
6. Research Team Development	6. Controlling research assistants to achieve the goals 8. the success of the process of research method distribution to research assistants and the constraints 13. What is your contribution for the success of this research

This study has collected 17 interviews with researchers from the University of Phayao. Hence, the research findings are as follows. The key informants of this research are 9 research assistants and 8 researchers. Most researchers have more than 5 years research experience. While only one research assistant has more than 5 years research experience. Those who are experienced researchers said that they gained their knowledge prior this research from the part research and through their teaching. While those research assistants gained their knowledge from their class during the undergraduate studies as well as the post-graduate studies. Some also indicated that they learnt from being a research assistant from the previous projects.

When discussing knowledge transfer, the researchers said that the method of transmission depends on the learning habits of each research assistant. In this research, researchers are encouraged to follow in the initial stage and to plan their own research with follow-up every 1-2 weeks. While most research assistants said that they learnt though on-the-job training, by transmitted from the teaching and provide additional training as well as recommending more research on your own and jointly discuss the results. The research assistant recruitment process on qualification criteria, it was found that basic knowledge of hard skills or specialized knowledge in the assignment for example in this research. Emphasis is placed on students who graduated from Geospatial because they require specific knowledge in reading maps.

Interpretation of satellite images and programming, joining soft skills in matters of generosity and kindness, social and knowing the season. Master's degree students in the field, both currently studying and having graduated. Qualifications require curiosity and determination, while specialization takes little into consideration. It is believed that teachers can teach jobs in science that the district can do.

To control research assistants to achieve the goals, it was found that schedule a presentation and progress report, regularly every week and after field trip, and regular reports and discussions are important things to do. When discussing methods in measuring the work success, it was found that there is no standard method. Just consider whether the results are in line with the timeline or timeline set or not. The success of the work can be measured by looking at the goals set and responding to the research objectives and timely conducting research. The success of the process of research method distribution to research assistants and the constraints are about 70%of the research were success. The obstacle that prevents 100% success was that the research assistant is a graduate student who is studying, so he will have a lot of burden. whether studying Do your own research and there is also a research part of the teacher. causing him may not be able to work full-time.

When asked the research leader whether he or she can reverse the process, how would he or she distribute the knowledge to the research assistants. Most of the researchers said that it starts with the selection process of research assistants. This was followed by an overview of the work and clarify details. Take to the field and follow up on the work to be more detailed and collect more evidence. Some also indicated that due to this research, the researcher has been assigned a task from the original research project leader. Therefore, there is an understanding of the work goals that are different from the previous research project leader. There is a working process to get research results that are different. This may require researchers to spend a lot of time adjusting in the early stages of their work. If it can be reversed, it starts with setting up the problem ask how to think, how researchers work and research goals before starting to plan the process of knowledge transfer more suitable for research assistants.

When regarded the knowledge learning process that research assistants gain from the research team leader, it is indicated that as a research assistant in this project, he or she gained new knowledge in many areas, both work processes that must be organized into a system and have a plan. Gaining knowledge about the adaptation of farmers to coping with climate change including how to conduct research effectively and effectiveness for farmers, researchers, and the public. When asking whether the research assistants gained enough knowledge to be a research assistant, some said his or her previous research knowledge and experience was quite profound. which may not have much to do with agriculture Including the research assistants themselves did not have deep knowledge of agriculture. Therefore, during the research, it is necessary to acquire quite a lot of additional knowledge. However, the knowledge that the research assistants had previously can be applied and improved in accordance with this research. Thus, the research assistants can adjust and apply their knowledge together with the acquisition of new knowledge in this research work.

When asking those research assistants about self-development for the success of your research project, they replied that it is important to strive to be thorough in operations and time management, including practicing additional English language skills to gather and analyze information relevant to the research work being undertaken. It is necessary to develop new knowledge all the time. as well as develop the skills to correct research methods according to cause and effect based on scientific principles and have research backing Seek additional knowledge from new research all the time. and learn from the mistakes made to develop and further research. When asking those research assistants about their contribution for the success of this research, some said they has very few in research contribution of 10-20% of the work. Their reasons are they had the opportunity to support the research team through

working under the research project. While some said they had about 70-80% of the work because they went to the survey area to collect research data. When asking if they can reverse the time to the beginning of this research project, what would they like to do. Most of the researchers and research assistants said that they want to improve research action plans and prepare research equipment to be ready for research. Some research assistants also said that to do research that will add new skills and build on existing skills to further develop.

Conclusion

This study found that when conducting research most researchers had research experience of at least 5 years while those research assistants had less experience. It was found that most researchers and research assistants gained their knowledge from their part research, teaching, and studies. This confirms the learning process by which people change behaviours, thoughts, and learn through hearing, touching, reading, and using technology.

This study also indicated the knowledge transfer can be done through the method of transmission depends on the learning habits of each research assistant. In this research, researchers are encouraged to follow in the initial stage and to plan their own research with follow-up every 1-2 weeks. While most research assistants said that they learnt though on-the-job training, by transmitted from the teaching and provide additional training as well as recommending more research on your own and jointly discuss the results. Moreover, the knowledge learning process that research assistants gain from the research team leader, it is indicated that as a research assistant in this project, he or she gained new knowledge in many areas, both work processes that must be organized into a system and have a plan. The results confirm the knowledge management theory that knowledge management is a tool to create, collect, analyse, and synthesize. It includes disseminating knowledge for efficiency and advancement of the organisation. Knowledge may also come from written knowledge such as books, textbooks, etc., as well as knowledge derived from individuals such as specialists. village sages, etc.

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