



SURVIVAL OF ASSISTANT PROFESSORS IN ACADEMIA: A CASE STUDY

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Abstract: The aim of this study is to identify the performance problems of assistant professors in Mehmet Akif Ersoy University Faculty of Education along with causes and sub-causes of underperformance. To achieve this goal, six assistant professors sampled conveniently among the assistant professors working there in 2015-2016 education year. The participants were interviewed through semi-structured interview instrument. The interview questions were written in accordance with Wile's synthesized HPT model. Then, interview questions were revised based upon content specialists' feedbacks and focus group discussion output. Then, the content analysis were conducted and findings were reported. In accordance with the findings, the causes and sub-causes of performance problems were categorized, reported, and discussed.

Keywords: Assistant professor, performance, human performance technology, HPT, academic staff

Özet: Bu çalışmanın amacı Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi'nde yardımcı doçentlik kadrosunda görev yapan öğretim üyelerinin performans problemlerini ve bu problemleri doğuran nedenler ile alt nedenleri belirlemektir. Bu amacı gerçekleştirmek için 2015-2016 eğitim öğretim yılında aktif olarak görev yapan 6 yardımcı doçent doktor uygun örnekleme yöntemiyle çalışmaya katılmışlardır. Katılımcılardan yarı-yapılandırılmış görüşme formu kullanılarak veri nitel veri toplanmıştır. Görüşme formunda yer alan sorular Wile'in sentezlenmiş insan performans teknolojileri modeline dayandırılarak hazırlanmış ve uzman görüşü alınarak ve odak grup görüşmesi yapılarak revize edilmiştir. Toplanan verilerin içerikleri analiz edilerek bulgular rapor edilmiştir. Bulgulara bağlı olarak, yardımcı doçent kadrosunda görev yapan öğretim üyelerinin performanslarına etki eden ana ve alt sebepler kategorize edilerek tartışılmıştır.

Anahtar sözcükler: Yardımcı doçent, performans, insan performans teknolojileri, akademik personel

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Introduction

Among faculty members, the position of assistant professor is the challenges one. The expectations from them are high, accordingly requirement of them too. They are required to allocate time for teaching, research, publication, and service in order to promote and to even keep their jobs that they already have. Because, they must achieve certain criteria for being reappointment to the position they possess. Therefore, they are expected to be a good teacher which is the primary and undeniable duty of faculty member. As they satisfy the employers with teaching skills, they are expected be visible in academic community for recognition which demands quality in research and publications. To handle all these work load to succeed, assistant professors may need improvement in productivity not a redundancy in their work places. For this reason, we may need to consider assistant professors performance deficiencies and their causes from the Human Performance Technology point of view.

Pershing (2006) defines Human Performance technology (HPT) as "the study and ethical practice of improving productivity in organizations by designing and developing effective interventions that are result oriented, comprehensive and systematic" (p. 6). HPT is a pragmatic philosophy (Ferond, 2006) initiated in United States in 1950s (Pershing 2006). Its concern is improving the value of performance (International Society for Performance Improvement, 1997). HPT attracted attention and gained importance rapidly. An importance of HPT increased due to the general agreement on the effects of both advancement on technology and globalization which caused organizational change (2006). In the complex structures of organizations, HPT procedures "generates measurable performance-improvement interventions and maximize their effectiveness by aligning them with the dynamics of the human performance systems" (Ferond, 2006, p.156). HPT process intends filling the gap between current performance and desired performance of employees (Wilmoth, Prigmore, & Bray, 2002) in any organization. Thinking university to be an organization makes faculty members employee. From this perspective, it can be argued that HPT may help to improve faculty members performance.

The Purpose of the Study

The aim of the current study is to determine the performance gap of employees' working as assistant professors at Mehmet Akif Ersoy University Faculty of Education. In order to achieve this goal, first, current performances of assistant professors will be revealed. Second, their desired/ expected performances will be determined. Third, the gap between the current and desired performances will be detected and reported. The ultimate purpose of the study will be able to categorize the causes and sub-causes of underperformance and be able to create a cause patterns. Thus, this study will promote the recognition of performance gap along with its reasons.

Theoretical Background

Human Performance Technology is defined by International Society for Performance Improvement as "a systematic approach to improving productivity and competence, through a process of analysis, intervention selection and design, development, implementation, and evaluation designed to influence human behavior and accomplishment" (2000). In order to

improve productivity and competence in work places, human performance technologists may need to apply some kind of HPT Models to find out the performance problems along with their causes and take actions to resolve those problems. Because the role of models in instructional design is "to provide us with conceptual and communication tools that we can use to visualize, direct, and manage processes" (Gustafson & Branch, 1997, p. 18). Since the HPT models migrated from instructional technology field, we can assume that HPT models come to existence for the same purpose. The HPT Models can be classified in three distinct categories which are diagnostic models, process models, and holistic models (Wilmoth, Prigmore, & Bray, 2014). Diagnostic models, such as Rummler's Nine Performance Variables, A Performer-Centered HPT Model, and Wile's Synthesized HPT Model, "tell the performance analyst where HPT may be applied" (Wilmoth et al, 2014, p.34) whereas the process models "go beyond the diagnostic activities of determining where to look for performance problems and begin to show us how to examine the problem itself" (p. 37). The Language of Work Model, Traditional HPT Process Model, and The Peak Performance System can be given as an example of HPT Process Models. The other category for the HPT modeling suggested by Wilmoth et al, is Holistic models which are "often represented by overlapping domains that exist separately, but that form an ideal performance zone when combined" (p.39).

In accordance with the purpose of the study which is briefly determining the performance gap and suggesting interventions to fill it out, the Traditional HPT Process Model will serve as a main HPT model to follow during the study. The reason for application of this model in the current study is that it is an intervention oriented linear model that driven by a gap analysis. Therefore, it perfectly aligned with the aim of the study. The Traditional HPT Model can be seen in Figure-1 below.

As it stated earlier, this study intends to reveal the current performance, to determine desired performance, to find the gap, and finally make some suggestions to improve performance via interventions. For this reason, the implementation of the selected/designed interventions and conducting evaluation, which can also be referred as back-end analysis, is out of scope. Because, it is unrealistic to develop, to implement, and to evaluate the interventions suggested in this study due to authorization and monetary challenges. Additionally, the possible solutions require people across different units of the organizations, in this case the university, come together and design interventions. Hereby, it would be wise to focus on only the first three phases of the HPT process offered by International Society of Performance Improvement (2004) and to ignore the rest of the phases.

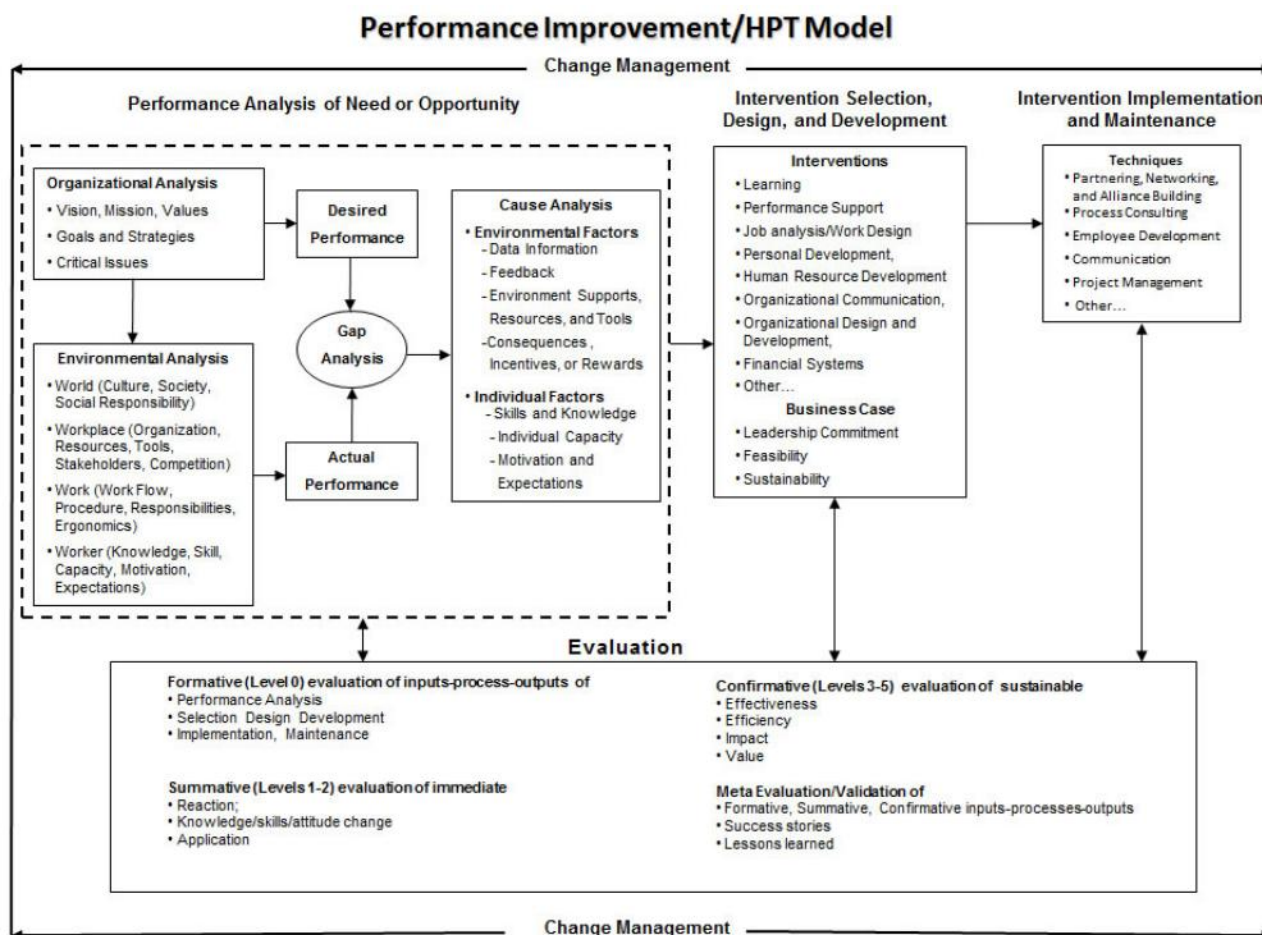


Figure-1. HPT Model (source: From Fundamentals of Performance Improvement: Optimizing results through people, process, and organizations, by D. M. Van Tiem, J. L. Moseley, J. C. Dessinger, 2012).

As it can be seen in Figure-1, the front-end analysis is a procedure which covers the first three steps of the HPT Model of ISPI (Chyung, 2008). Those steps are performance analysis, cause analysis, and intervention selection. Harless (1973) describes front-end analysis as a "problem solving applied to human performance—a series of analytical and decision-making steps—that lead to plans for overcoming deficiencies in human performance" (p.231). Front-end analysis prevent practitioners from unnecessary training and investment on performance improvement. Harless (1973) explains the aim of conducting front-end-analysis as stating that:

"Front-end analysis is about money, first and foremost. It is about how to spend money in ways that will be most beneficial to the organization and the performers in that organization. It is also about avoiding spending money on silly things like instruction when there is no instructional problem; or training everybody in everything when you can get by with training fewer people in a few things; or flying lots of trainees in for a course when a send-out checklist would do" (p.229).

In order to improve human performance, we need to realize the problem, to determine the nature of the problem by asking various questions, and to identify its causes, respectively (Chyung, 2008) to get some results. That is what exactly this study intends to do.

In the current study, we use the model discussed above as main route while dealing with human performance problem. Nonetheless, as it was mentioned above, diagnostic models more focuses on an identification of exact location of the problem. For this reason, Wile's Synthesized HPT Model, which is one of the diagnostic models in HPT, will be applied to identify the root causes of the performance problems. The Model can be seen in Figure-2.

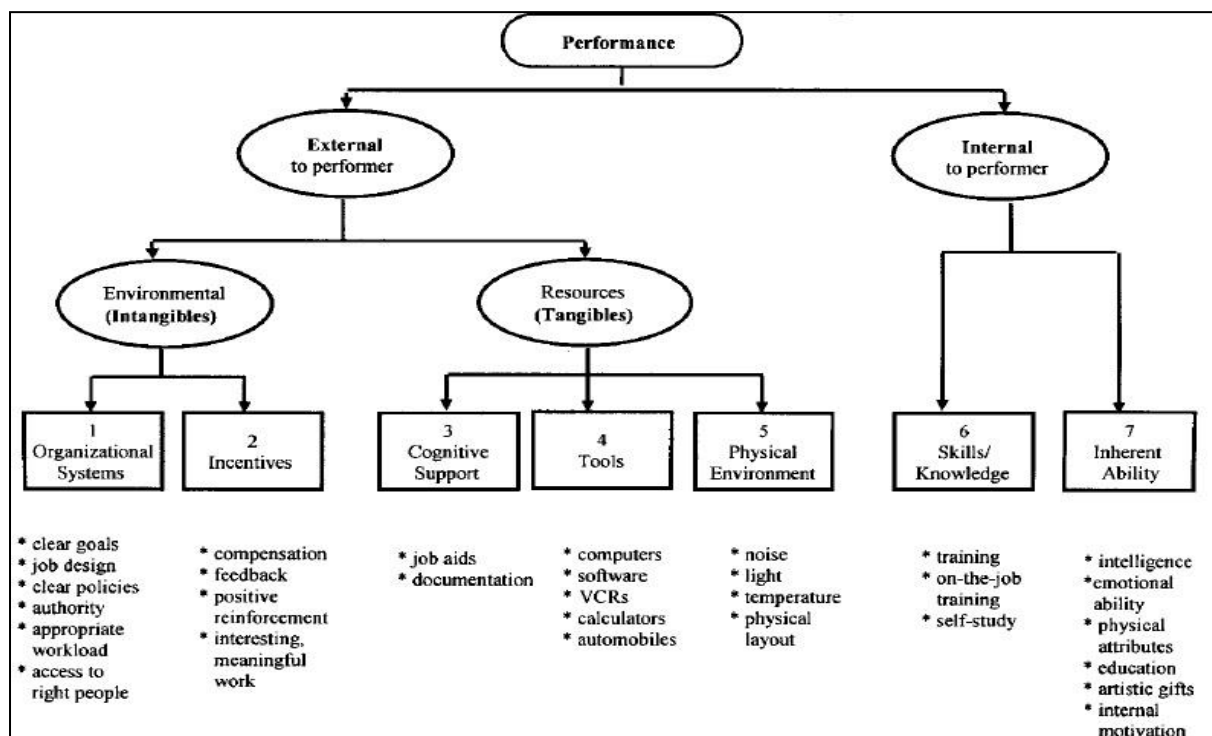


Figure-2. Wile's Synthesized HPT Model. (Source. Foundations of Instructional and Performance Technology, by S. Y. Chyung, 2008)

This model was chosen to determine the performance problems due to the fact that "simplicity of the diagnostic flow in this model makes it easy for the analysts to take the first steps in solving a performance problem" (Wilmoth, Prigmore, & Bray, 2002, p. 19). This model approaches performance problems dividing them into two domains: the problems which are external to the performer, and the problems which are internal to the performer. These domains are continuously subdivided until each subcategorized performance problems requires distinctive intervention. This model would enable us to address all types of possible performance problems and not to miss out some of them.

In addition to those two models, Ishiwaka's cause-and-effect analysis were applied in this study to determine possible causes for the determined performance problems. It is also known as fishbone analysis due to the fact that it uses diagram that looks like a fishbone (Chyung, 2008). The diagram has the three components of fishbone which are the head, the main bones, and the small bones as it can be seen in Figure-3 below. Whereas the head bone

carries the problem, the main bones carries the categories of causes, and the small ones carries the root causes (Chyung, 2008).

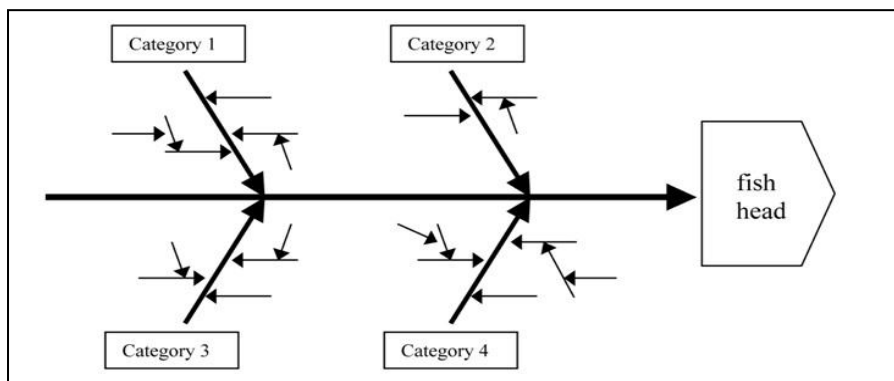


Figure-3. Fishbone Diagram. (Source. Foundations of Instructional and Performance Technology, by S. Y. Chyung, 2008)

Methodology

Method

The case study is an interpretive-hermeneutic research category which aims to understand interactions within a social unity (Gordin, 2006). There are several categorization exist in the literature of case study. Among those, Stake (1995) categorizes case studies in three as intrinsic, instrumental, and collective. To conduct an instrumental case study, according to Stake (1995), "the researcher focuses on an issue or concern, and then selects one bounded case to illustrate this issue" (Craswell, 2007, p.74). Through an instrumental case study method, this study aims to investigate the faculty of education as an organization with the intention of determining the performance deficiencies of assistant professors who constitute a remarkable employee group in an academic organization. The current study exemplifies an instrumental case study because the researcher selected a small number of subjects to investigate certain pattern of behaviors as it was depicted by Zainal (2007).

Participants

The sample of the study comprised of six assistant professor currently (in 2016) working on Mehmet Akif Ersoy University Education Faculty. They were conveniently sampled from different departments. Details about participants are provided in Tablo-1 below.

Table 1.

Descriptions of Participants

| | Gender | Education Level | Field | Experience as an Assistant Professor |
|---------------|--------|-----------------|------------------------|--------------------------------------|
| Participant-1 | Female | PhD | Educational Leadership | 2 years |
| Participant-2 | Male | PhD | Classroom Teaching | 7 years |
| Participant-3 | Male | PhD | Classroom Teaching | 7 years |
| Participant-4 | Male | PhD | CEIT | 1 year |
| Participant-5 | Female | PhD | CEIT | 1 year |
| Participant-6 | Male | PhD | Science Teaching | 10 years |

Data Collection Instrument

Data collected through the semi-structured interview questions that were developed for this study. At the beginning, the questions were written under the categories of the factors effecting performance aligned with Externality-Tangibility (E-T) Model of human performance developed by Wile (2014). In his model, Wile "categorizes nine all-inclusive elements of HPT into families of elements that can be external to a performer and tangible or intangible" (2014, p.14). Those categories are can be seen in the E-T Model provided in Figure-4.

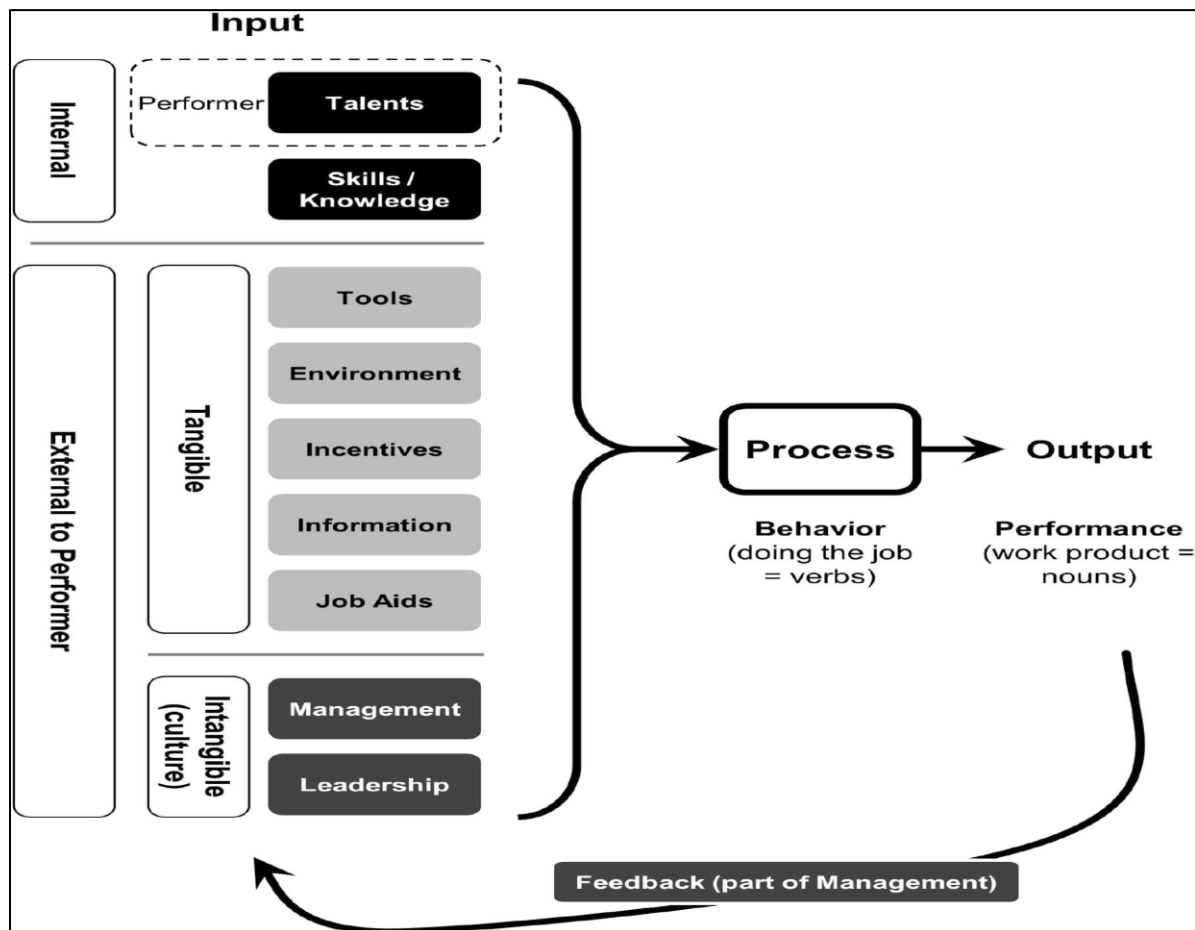


Figure-4. Externality-Tangibility Model of Human Performance (source. Why does do-part 3: External-intangible elements of Human Performance, by D. Wile, 2014).

After writing an interview questions that fit the categories mentioned above, additional questions that do not fit those categories were written in accordance with the work definitions of assistant professors in the relevant literature. Then, all questions were reviewed and discussed in a focus group within the Human Performance Technology course. Four PhD students and the course instructor participated in discussion. Thus, the final questions were formed under the categories and subcategories provided in Table-2 below. Lastly, one language expert reviewed and proofread the final questions.

Tablo-2.

Categorized Questions

| Categories | Subcategories | Number of questions |
|---------------------------|----------------------|---------------------|
| Skills and Knowledge | | |
| | Teaching | 6 |
| | Classroom Management | 4 |
| | Assessment | 6 |
| Academic works | | 12 |
| Academic contribution | | 5 |
| Tools | | |
| | For Teaching | 5 |
| | For Academic Work | 5 |
| Work Environment | | 6 |
| Motivation/Incentives | | 7 |
| Information | | 7 |
| Organizational Support | | |
| | Current Supports | 8 |
| | Desired Supports | 6 |
| | What to do? | 3 |
| Communication/Interaction | | 10 |

Data Collection Process

The participants were interviewed in their own offices located in Mehmet Akif Ersoy University Education Faculty after they were informed about the study and asked for their oral consent to participate. The interview durations were ranged from 40 minutes to 68 minutes. Because they all have individual offices, ambiance for each interview was quite appropriate.

Data Analysis*Desired Performance.*

2547 Higher Education Law no. 22 describes the duties of faculty members as follows:

- To perform and to get performed education - training and workshop, and to manage projects and seminars in higher education institutions in accordance with the purpose and principles stated in legislation
- To conduct scientific researches and publications
- In accordance with the program regulated by concerned unit chairmanship; to help students in certain topics, to lead and to guide them aligned with purpose and principles of this legislation,
- To fulfill the tasks assigned by the authorized competent,
- To carry out any other duties given by this law.

Reappointment to assistant professor position is another expectations of assistant professors in order to keep their position. According to *Instructions for Application Provision and Execution Principles for Faculty Member Position at Mehmet Akif Ersoy University*, applicant must collect 50 academic points among activities listed below.

- Published articles
- Oral Presentations
- Books
- Translated book
- Editorship and Refereeing
- Adscription
- Art activities

Details about the activities and corresponding scores are provided in the *Appendix-1*.

Another expectations from or desire of assistant professor is being appointed to associate professorship position. In order to receive this privileges, a candidate must held educational *science base field* criteria for associate professorship which has been set by the interuniversity council in Turkey. The criteria can be found in *Appendix-2*. Then, a candidate can apply for the associate professorship title. If their academic works are found sufficient by the five jury members appointed by the interuniversity council, then, they will face with verbal examination by the very same juries. If they are convinced that an applicant deserve such title, they can possess it. As you can see, the process is very demanding and challenging.

In summary, assistant professors are expected to teach and guide students, to fulfill the tasks given by authorities, to conduct scientific researches, and make publications simultaneously. Handling these tasks within the given time period may require careful organizational supports, a lot of effort, and different skills such as time management, teaching, research, classroom management and so on. Regardless of how skillful and knowledgeable an assistant professor is, within the organization, they are still a cog in the wheel when it comes to organization's performance. Therefore, the assistant professors participated in the current study stated their weaknesses and the causes for those. It was not realistic to set a cut of score to judge their performance. Instead, during the interview, they were asked about their problematic areas in their duties. To see the whole picture, semi-structured interview strategy was applied.

Actual Performance.

The content analysis method is used for analyzing actual performance data. The interview records were transcribed and coded after reading twice for each interview transcript. Before beginning to coding transcribed data, 22 priori codes were recorded in the code book along with their descriptions. Those priori codes were derived from the categorized interview questions and conceptual framework. Then, each transcribed interview records were read to code newly emerging concepts, problem causes, and relationships etc. as emergent codes. Once the coding process is completed, excel file was created based on those codes. The next step was thinking about the relationships of codes and grouping them together to create meaningful categories. In this particular case, the codes for similar performance problems were grouped in a broader category first. Then, the causes for those problems clustered around each of those categorized problems. Later, initial causes for those each cause were also determined and grouped together and then labeled. Lastly, the fishbone diagram displayed below were created based on the performance problems and causes of those. Before

creating fishbone diagram, coded schema was checked and revised for any mismatched, collapsing, and expanding categories. In addition, the frequencies of each mentioned performance problems along with their causes and sub-causes were counted and displayed in Appendix 3. The causes with very low frequencies (i.e., 2 out of 6 participant) were omitted from the diagram.

Findings

Based on the information gathered from the participants, among the responsibilities of assistant professors, performance gap unfolded in only teaching and research. They were counted as problems. Teaching problem along with its main causes and sub-causes demonstrated in Diagram-1 whilst Research problem along with its main causes and sub-causes demonstrated in Diagram-2.

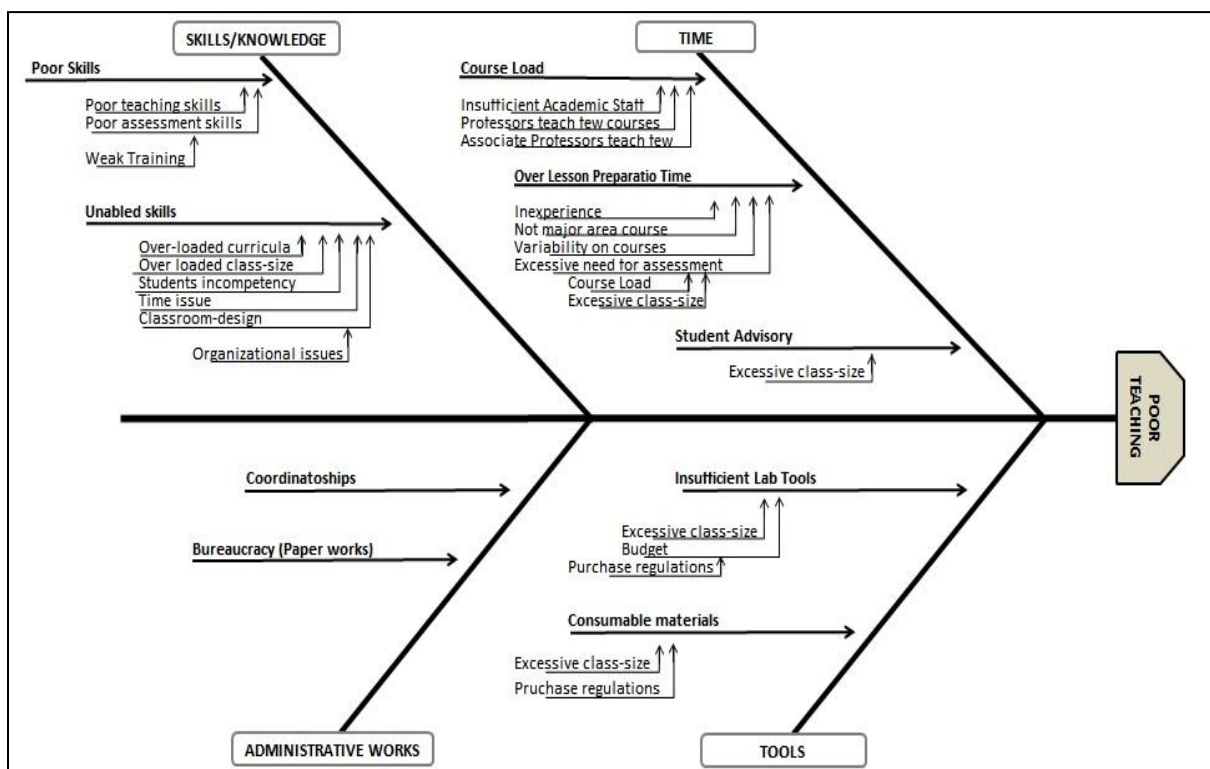


Diagram-1. Causes and sub-causes for poor teaching performance of assistant professors.

As it can be seen from the Diagram-1 above, there are four main causes aroused from the interview data for poor teaching performance. Participants believe that if the main causes are dissolved away, then the gap between the desired teaching performance and actual teaching performance will be closed. In order to dissolve the main causes, sub-causes must be obviated first. Because, sub-causes are the reasons for main causes. In other words, sub-causes are generating main causes, and main causes creates the performance gap. The sub-causes are also created by other causes which affects more than single sub-cause. For instance, excessive class-size is the cause for both consumable materials and insufficient lab tools which are categorized under the tools category. Moreover, excessive class-size is also one of the causes for skill application unabler under the skills and knowledge category. Therefore,

even if the causes are categorized as distinctive as possible, the problem may require holistic approach for permanent solution.

After careful data review and diligent content analysis, we came up with four main causes for poor teaching performance of assistant professors. These main causes are skills and knowledge, time issues, administrative work load, and insufficient tools.

Especially skills are obvious weakness of participants for teaching. Because they all participants have moderate or low skills in one of those areas which are teaching skills, classroom management skills, assessment skills, and research skills. According to data, skills and knowledge cause is created one of two sub-cause which are possessing poor skills and knowledge (especially teaching and assessment skills) and skills unablars which are reported as followings: over-loaded curricula, excessive class-size, students' incompetency, insufficient time, and unsuitable classroom designs.

The sub-causes underlying time issue are caused by excessive course load, extreme lesson preparation time needs, and advisory for outnumbered students. Course load sub-cause is derived from limited academic staff, and fewer course load of associate and full professors. Furthermore, the participants listed the possible reasons for extreme lesson preparation time. The list consist of but not limited by followings: inexperience, course variability, being exposed to teach off-area courses, and time consuming assessment work which is derived from excessive course load and class-sizes which also affects advisory load.

The most stressed sub-cause for time issue were limited number of instructors and reduced course loads of full and associate professors. The course load of participants ranged between 24 to 40 hours per week whereas the most professors' and associate professors' are around 8 hours per week. They highlighted both an injustice in course load dispersion and the importance of experienced and knowledgeable instructors for students' developments. Participant 3 highlighted this problem as stating that "the administration should force professors to offer courses..... Ok. You can offer any course you want, but just offer some courses. There must be some courses you are teaching. Let students to see you". Additionally, participant 4 stressed that "Professors should teach more because they are experienced academic staffs. An assistant professor should adhere themselves to research and academic development as novice academician".

Another commonly mentioned sub-cause cause for time issue was executive works such as coordinatorships such as ECTS, Farabi, and Erasmus etc. The participant highlighted the time consuming impact of these duties. The participants agreed that some of those works can be handled by administrative personals. If they are needed for advice, they would be happy to help. But, they do not want to undertake all responsibility of those works due to time issue.

In the tool category, insufficient lab tools and consumable materials are prominent causes for poor teaching. The sub-causes are reported by the participants as outnumbered students, insufficient budget, and purchase regulations. In addition to all these, coordinatorship, and paper works (bureaucracy) are seems other unablars of desired teaching performance. The participants emphasized the insufficiency of computer lab tools as well as the tools in science labs. They attributed these problems mostly to excessive class-size. Participant 4 emphasized

this problem as stating that "we are teaching 40 students in the lab with 20 computers if all works fluently at the time". The other cause highlighted by participants is mostly related to the tools needed in their office because gaining those tools are challenging, time consuming, and yet may or may not attainable. Because, following the regulations is both time consuming and exhausting.

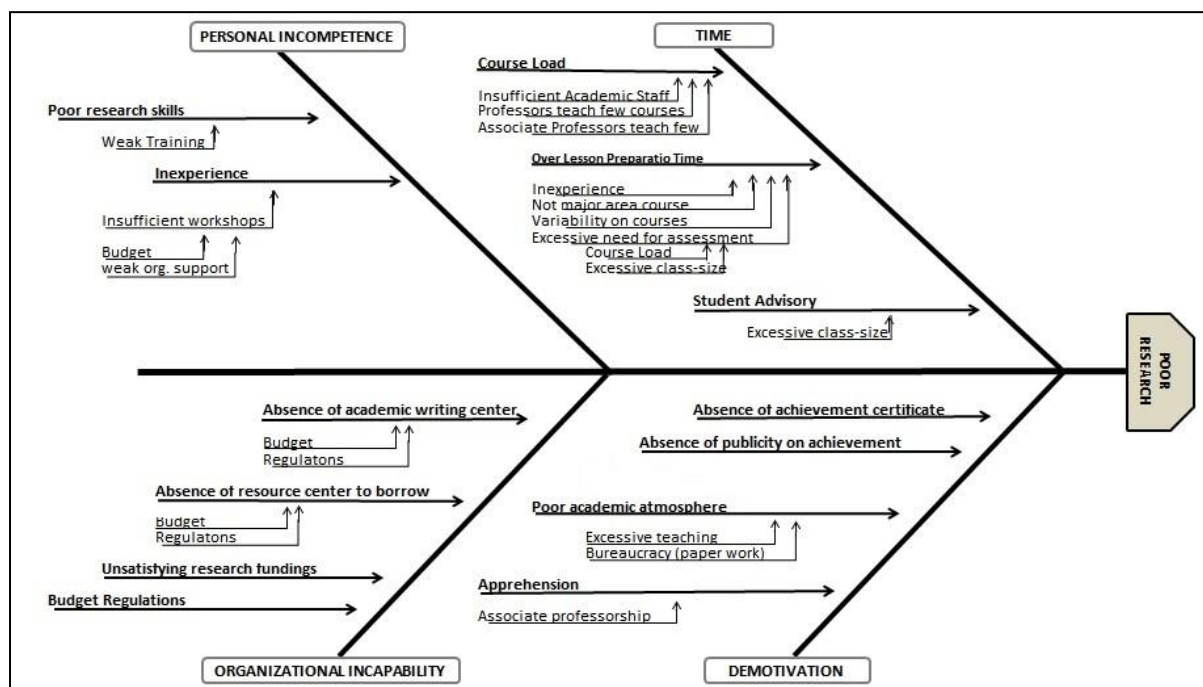


Diagram-2. Causes and sub-causes for poor research performance of assistant professors.

Content analysis revealed four main causes for existence of gap between desired and current research performance. These main causes are personal incompetence, time issue, organizational incapability and demotivation. Personal incompetence caused by poor research skills and inexperience. The reason for these sub-causes are derived from weak training opportunity, few number of workshop, poor budget, and weak organizational support according to data collected.

Another barrier to desired research performance is reported as lack of time which participants believe that course load and lesson preparation consume the most of it. As you can notice, the very same reasons were also sub-causes for time issue in the first diagram. The roots for course load and lesson preparation time are repeating in the research problem as well. On the other hand, organizational incapability and demotivation appear as distinctive categories for research unblers. The most surprising findings is that data revealed more need for symbolic incentives than financial ones. Thus, it shows that they want a recognition of their achievements.

Assistant professors have the following expectations from their organization: academic writing center for consulting their manuscripts, resource center service in which they can borrow hardware and software, revision on oppressing budget regulations, and satisfactory research fund. Along with personal incompetence, time issue, and organizational incapability, according to assistant professors, demotivation is another main cause for poor research

performance they demonstrate. The sub-causes may be listed as absence of certificate and publicity of success, lack of academic atmosphere, and apprehension for promotion. The participants also mentioned excessive teaching hours and paper work as sources of unsatisfactory academic atmosphere among the faculty members.

Discussion

The problem causes for assistant professors relies on both internal and external categories of Wile's synthesized HPT Model. Looking at the external dimension of poor performance causes, they can be categorized as tangibles (environmental) and intangible (Resources) in accordance with Wile's HPT Model. The data did not revealed problem causes in each and every subcategories of model. Nonetheless, it covered some of the items listed under organizational support as well as incentives. For instance, complains about paperwork as well inappropriate course load can be count for organizational system's weakness. Another intangible cause for performer is lacking positive reinforcement. The participants reflected this issue as saying that their achievements are neither being announced publicly nor rewarded by certificate of any kind. This causes are located under the incentives category of intangible performance problem causes.

Insufficiency of hardware, software, lab materials and consumables goes under the tolls category which is one of the tangible causes for performance problems. Participants did not mentioned any physical environmental problem other than unsuitable classroom design which is closely related to physical layout. It means that, the work places as well as offices of assistant professors are convenient in terms of temperature, light, noise and so on. The data did not revealed any inconvenience regarding cognitive support such as job aids and documentation as well.

Another dimension of Wile's synthesized HPT Model is demonstrates other types of problem causes which are internal to the performer. These causes are mainly broken down under two distinct categories which are skills/knowledge, and inherent ability. The data did not revealed any causes related to inherent ability. Yet, most of the participants reported that, they still need to develop some skills for teaching and researching. They also mentioned some barriers which constrain tem from applying teaching and research skills they already possess such as extensive class-sizes, overloaded curricula, and inexperience.

An interesting finding in the study was emergence of time category as a main cause for both poor teaching and poor researching. Time did not fit any of the categories of performance problems hypothesized by Wile (see Chyung, 2008). Nevertheless, one cannot deny that if insufficient time is an obstacle for better performance, then, there is an inappropriate workload in an organization. Therefore, time category may goes under organizational system category. In the current study, we chose to take time issue as a main cause to underperformance because it brought up by every single participants. Also, it had lots of sub-causes for time issue.

Conclusion

The participants expressed some deficiencies in research skills as well as eager to develop them. These are the only underperformance causes which internal to performer. They

basically attributed these incapableness to the lack of time and opportunities offered by organization. They stressed that the lacking of opportunities for developing such skills in small cities like the one they live and work in refrain them from professional advancement. Therefore, they believe the importance and the necessity of such supports, and they are expecting them from their organization at faculty as well as higher levels administrations. The most common organizational support needs can be listed as academic writing and proofreading centers, workshops to teach advanced statistical analyses and qualitative research techniques, and trainings opportunities for building software and technology skills. They also believe that the existence of project information office (by means is informing about project calls, offering detailed information about the application and requirements of project, helping them to overcome application procedure etc.) would help those novice academics. Additionally, they also expect some financial supports such as paying publication and conference fees. The justice in course load allocation as well as hiring new faculty members to share course loads are other expectations of assistant professors. These are the obstacles that might be resolved by the faculty and university managerial boards.

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Appendix.

The Frequencies of Causes for Problems within Each Category

| PERFORMANCE PROBLEM AREA AND CAUSES | f |
|-------------------------------------|---|
| DEMOTIVATION | |
| Lacking financial incentives | |
| Conference fee | 2 |
| Research budget | 3 |
| Lacking symbolic incentives | |
| Certificate of achievement | 4 |
| Publicity on achievement | 4 |
| Associate professorship | 2 |
| Intrinsic | 3 |
| Administrative | |
| Bureaucracy | 4 |
| Course load | 3 |
| Apprehension | 2 |
| Job description | 2 |
| Lacking of academic atmosphere | 4 |
| TOOLS | |
| Tool access problems | |
| Lab materials | 3 |
| Licensed software | 3 |
| Printer | 4 |
| Causes for insufficient tool | |
| Excessive class sizes | 2 |
| Purchase regulations | 2 |
| ORGANIZATIONAL SUPPORT | |
| Lacking support centers | |
| Proofread | 3 |
| Academic writing | 4 |
| Training | 6 |
| Pre-evaluation office | 2 |
| Lacking resources | |
| Project budget | 2 |
| Conference/publication fee | 4 |
| Technology resource center | 2 |
| Lacking Project information office | 4 |
| WORK ENVIRONMENT | |
| Classroom design issues | 5 |
| Insufficient classroom and labs | 2 |
| Sensory environment | |

| | | |
|------------------------------|-------------------------------------|---|
| | Ventilation issue | 2 |
| | Temperature issue | 2 |
| SKILLS/KNOWLEDGE | | |
| Poor Skills | | |
| | Teaching | 3 |
| | Classroom management | 1 |
| | Assessment | 3 |
| | Research skills | 3 |
| Barriers to apply skills | | |
| | Barriers to apply teaching skills | |
| | Class size | 4 |
| | Students' background | 3 |
| | Lacking tools | 4 |
| | Classroom/lab designs | 3 |
| | Over loaded curricula | 2 |
| | Barriers to apply assessment skills | |
| | Time issue | 3 |
| | Class size | 4 |
| | Course load | 6 |
| | Barriers for classroom management | |
| | Class size | 2 |
| | Inexperience | 3 |
| Lacking Training Opportunity | | |
| | Academic Writing | 4 |
| | Project development | 3 |
| | Workshops | 5 |
| TIME ISSUE | | |
| Excessive teaching hours | | 6 |
| Course load | | 5 |
| | Causes of course load | |
| | Insufficient academic staff | 5 |
| | Profs and associate profs teach few | 2 |
| Preparation to lesson | | |
| | Causes of more preparation time | |
| | Inexperience | 4 |
| | Teaching off-area courses | 2 |
| | Variety of courses | 2 |
| Assessment takes time | | |
| | Causes of assessment time | |
| | Excessive class size | 4 |
| | Excessive course load | 3 |
| Advisories | | 2 |
| Executive works | | 4 |
| | Coordinatorship | 4 |
| | Project bureaucracy | 3 |
| Meetings | | 2 |
| Poor communication | | 2 |