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A Model Framework for Cultivating Competencies in Trainee Doctors During Housemanship

Pembangunan Kerangka Model Untuk Memupuk Kompetensi Doktor Pelatih Semasa Housemanship

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Abstract: Knowledge and skills are essential to understanding, especially in organizational learning. Both elements are also expressed in housemanship learning. Knowledge and skills need to be balanced to ensure the competence of trainee doctors. Knowledge and skills must go hand in hand in ensuring that the born doctor is competent and efficient. Weaknesses in competence can interfere with work performance. Therefore, this study was conducted to examine several research objectives, namely (i) to identify the level of learning of trainee doctors during housemanship, (ii) to identify the level of competence of trainee doctors during housemanship, (iii) to examine the relationship between the level of learning of trainee doctors and competence, and (iv) to develop a model framework for learning strategies for trainee doctors during housemanship. The study uses a quantitative approach through the distribution of questionnaires. The study is conducted in a hospital in Johor. The study uses a purposive sampling method because the study sample focuses on trainee doctors undergoing housemanship in the second year only. The results of the study found that the level of learning and competence of trainee doctors is high, and there is a significant relationship between the level of learning and the competence of trainee doctors during housemanship. The researcher has also developed a learning strategy model for trainee doctors to reference future researchers. In conclusion, this study is important to ensure that the competency of trainee doctors can be achieved according to learning needs. In the long term, this study can be used as a learning development process during housemanship. This study is specific to the field of knowledge in the context of career development and learning.

Keywords: Knowledge, Skills, Housemanship, Competence, Trainee Doctor;

Abstrak: Pengetahuan dan kemahiran adalah dua kefahaman khususnya dalam pembelajaran organisasi Kedua-dua elemen ini turut dinyatakan dalam pembelajaran housemanship. Pengetahuan dan kemahiran perlu seimbang dalam memastikan kompetensi doktor pelatih. Peranan pengetahuan dan kemahiran perlu seiring dalam memastikan doktor yang dilahirkan adalah kompeten dan cekap. Kelemahan dalam kompetensi boleh mengganggu prestasi kerja. Justeru, kajian ini dijalankan untuk mengkaji beberapa objektif kajian iaitu (i) mengenalpasti tahap pembelajaran doktor pelatih semasa housemanship, (ii) mengenalpasti tahap kompetensi doktor pelatih semasa housemanship, (iii) mengkaji hubungan antara tahap

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pembelajaran doktor pelatih dengan kompetensi serta, (iv) membangunkan kerangka model strategi pembelajaran doktor pelatih semasa housemanship. Kajian menggunakan pendekatan kuantitatif menerusi edaran soal selidik. Lokasi kajian adalah di sebuah hospital di negeri Johor. Kajian menggunakan kaedah persampelan bertujuan kerana tumpuan sampel kajian adalah doktor pelatih yang sedang menjalani housemanship pada tahun kedua sahaja. Hasil kajian mendapati tahap pembelajaran dan kompetensi doktor pelatih adalah tinggi serta terdapat hubungan yang signifikan antara tahap pembelajaran dengan kompetensi doktor pelatih semasa housemanship. Pengkaji juga telah merangka sebuah model strategi pembelajaran doktor pelatih sebagai rujukan pengkaji akan datang. Kesimpulannya, kajian ini adalah penting untuk memastikan kompetensi doktor pelatih dapat dicapai mengikut keperluan pembelajaran. Dalam jangka masa yang panjang, kajian ini boleh digunakan sebagai proses pembangunan pembelajaran semasa housemanship. Kajian ini khusus untuk bidang ilmu dalam konteks pembangunan dan pembelajaran kerjaya.

Kata Kunci: Pengetahuan, Kemahiran, Housemanship, Kompetensi, Doktor Pelatih;

Introduction

Organizational learning is critical to ensuring the presence of superior and competent employees. Employees will gain competency following the organization's mission, vision, and objectives because of organizational learning. Training and learning requirements must be met and adhered to. Murray et al. (2021) state that professional medical practitioners, for example, always provide the highest quality service to ensure patient satisfaction. Thus, the preparation of certified doctors has been implemented since the first stage, housemanship. All medical graduates must complete housemanship before becoming professional medical practitioners. Trainee doctors will practice housemanship for two years, filling six and several other departments following the Ministry of Health's guidelines. There are six departments for trainee doctors during housemanship. Housemanship is a process that encourages and develops competence among trainee doctors to achieve high quality. During the horsemanship, trainee doctors must join the participating departments, including the Departments of General Medicine, Obstetrics and Gynecology (O&G), Pediatrics, Orthopedics, Surgery, and Anesthesiology. The six departments are mandatory to confirm that trainee doctors discover subspecialties in various occupations. The subspecialties in other departments involve nephrology, infectious diseases, haematology, cardiology, respiratory medicine, urology, neurosurgery, cardiothoracic, and plastic surgery. These departments are required for trainee doctors to be trustworthy and adaptable in transferring their duties (Milota et al., 2019; Reid et al., 2015). It also prepares trainee doctors to attach with patients with different illness conditions (Kelly et al., 2019). This study will thoroughly explore a range of challenges and prior research to gather valuable insights, mainly focusing on the trainee doctor's experience, conceptual understanding, and practical skills during housemanship.

Literature Review

Theories and models related to organizational learning were evaluated for strengths and weaknesses to ensure the research fundamentals were fulfilled. The main objective of this research is to investigate the relevance and operational implications of learning on trainee doctors' competencies. Based on previous research, quite a few studies confessed the limitations, gaps, and critical domains of knowledge when validating that the study's focus on doctor trainee competency may be completed and recognized. Trainee doctors' careers indicated that their services contribute significantly to individual harmony and well-being (Raduan et al., 2009). As a result, an organization is a location or community that leads to competency development (Nor et al., 2015). Organizations must supply learning and training opportunities to confirm the trainee doctor's sustainability as a formal or informal learning development (Moses, 2012; Tortorella et al., 2015b). The researcher studied learning theories and models, including the Senge Learning Model (1990), for identified learning organization concepts.

According to the Senge Learning Model, four essential philosophies are necessary to perform during the learning process. The assumption is self-control (an individual's ability to understand approximately for knowledge and skill enhancement). The second principle is the mental model. The third principle is that managers and supervisors supervise the development and implementation of goals, missions, and visions for employees through information revealing. The fourth component is logical thinking (workers should manage mechanisms holistically and examine the grounds and concerns of learning). Senge's four points (1990) compromise a broad understanding of how the environment influences a person's learning. Senge's Model (1990) assesses knowledge and skills as two significant factors. Senge launches by describing the talent that allows skills and knowledge. The second point is a standing of thought endurance; the third view is conversing the role of superiors in forming subordinate knowledge; and the final view discusses learning consideration. These four views utilized the context of learning theory. However, it does not offer a complete explanation of its use in the learning environment in discussion, which is essential. The researcher used the Senge model as the study's fundamental focus on the trainee doctor's knowledge and skills (Caldwall, 2012). As Senge mentioned, the researchers exposed that environmental influences have impacted via four views.

The determination of housemanship's to generate competent doctors for public health. A professional in medicine should be consistent in services and career. The organization should investigate slight defects in specific learning instruments, the environment, or technologies. The crisis needs to be eliminated and brought about by action. It also becomes perfect when knowledge and abilities are used to ensure services transfer well (Adel et al., 2021). For example, reflection resolution is used to execute improvement, and evaluation methods are used to close knowledge and skill apertures (Diemers et al., 2011). Learning mistakes are referred to as experiences. However, the reaction of making corrections and reprimands from superiors is required to avoid repeating errors. Experiences that involve too many mistakes must be overcome. This is due to work disruption, particularly in terms of service quality. Service quality necessitates a combination of two components: conceptual and operational. Conceptual thinking requires a great deal of thought and cognitive elements. In contrast, operational refers to the outcome of actions, attitudes, and behaviorism. The experience component is highlighted because, according to Kolb (1984), conceptual and operational elements are critical in gaining experience while working. Experience is essential in determining an employee's maturity and ability to improve consistently.

Problem Statement

According to Yusoff et al. (2021), learning in medical organizations necessitates a combination of two elements: knowledge and skills. Both are significant and must be parallel because they are mutually beneficial. Knowledge is the foundation and guide for carrying out procedures and the basis for actions taken. However, skills are methods that will be interpreted based on knowledge. Johansen et al. (2021) also explained how knowledge can be used as a source of information to develop competence. Quality results will come from accurate information. However, the primary problems and objectives of the scope of work must also be identified (Shankar & Rusyda, 2023). Knowledge and skills should be enhanced to suit the organization’s recent requirements. Employee personality, commitment, assuming standards and organizational behaviour are needed (Latha et al., 2023). These difficulties are associated with employees' knowledge and skills in accelerating long-term and significant organizational occurrence competency (Barnett et al., 2012).

Organizational learning must be executed following the company's needs. Learning must be consistent with the employee's background, scope of work, and job competence to broaden the responsibilities. Hence, Hasbul Hadi and Mohd Mursyid (2022) mention that the approach to knowledge and skills must parallel attaining work-life balance. Thus, the organization’s learning style variety is critical to ensuring the effectiveness of the company's objectives. Employees are encouraged to approach problems conceptually, experiment, and execute action (Noor Azizah et al., 2020). Employee talents must be discovered, and deficiencies or learning gaps should be explored. Employers need to recognize employees' inadequacies as gaps and restrictions. The long-term organizational learning strategy revolves around evaluation in this expanse of softness. This guarantees that the expenditures, time, and consideration dedicated to increasing organizational learning are utilized effectively.

According to previous researchers' perspectives,

the conceptual and experimental provinces have been highlighted in terms of thinking, task outcomes, concept creation, task quality structure, etc. There is an immobile, unclearly defined method for utilizing experience as the root of learning success (Kellman & Krasne, 2018; Beran et al., 2023). The researcher desires to investigate how diverse experience levels disturb competency in this context. The researcher will explore strategies to strengthen the connection among conceptual learning, experimentation, and competency achievement. In addition, a review of the relationship between experience and competence will be completed to determine whether experience influences trainee doctors' productivity during housemanship. Nonetheless, previous research has not entirely investigated the reason there is a relationship between trainee doctors' learning achievement and competence during housemanship. As a result, the researchers developed the hypotheses that followed:

$H_{o:}$ There was no relationship between the trainee doctor's level of learning achievement and competence during housemanship.

Research Objective

The researcher has well-defined research objectives based on the previous study's discussion:

i. To identify the level of learning of trainee doctors during housemanship.
ii. To identify the level of competence of trainee doctors during housemanship.
iii. To examine the relationship between the level of learning of trainee doctors and competence.
iv. To develop a model framework for learning strategies for trainee doctors during housemanship.

Research Methodology

The design is significant as it enables the researcher to devise its implementation method. According to Chua (2006), inaccuracies in research design led to inaccurate consequences for studies. Therefore, the research design must proceed via an extensive planning phase that clarifies the challenges and the research's objectives and goals. As an outcome, the researcher investigates the possibility of the research completing (Cooper & Schindler, 2001). In this study, surveys were employed as a quantitative research instrument. The survey was conducted via questionnaire delivery. The results of the research were evaluated utilizing inferential as well as descriptive methodologies.

Population And Sampling

The method employed in this research is restricted to a few participants, resulting in the non-probability sampling strategy being considered acceptable. As a result, the sampling criteria used are selective and purposeful (Gill & Johnson, 2002). The researcher researched housemanship learning through experience, conceptualization, and experimentation. The researcher also completed a competency study. The researcher selected second-year trainee doctors as a research sample to prevent discrepancies and inaccuracies. The phrase "second year" defines a trainee doctor in their second year of housemanship. Trainee doctors must chase or complete the third phase of housemanship learning. Trainee doctors must complete a maximum of six departments during housemanship. Six departments have been selected at random. In particular, the emergency and trauma departments had considerable classifications. The emergency and trauma unit requires trainee doctors to participate as their fifth or final selection for housemanship. However, this research only suggests that the medical trainees recruited as participants in the study are in their second year and currently in their third housemanship in the department. Therefore, the number of departments and years of expertise are used to select the research sample.

Research Finding and Discussion

Background Information

Table 1 emphasizes the findings for 102 trainee doctors having attended their second year of housemanship. There are an additional two male than female respondents. Most respondents were around the ages of 21 and 25, with the remaining respondents falling between the ages of 31 and 50. The research additionally discovered that 69.6% of respondents were unmarried. In terms of educational background, 68 respondents are local graduates. The other 34 are medical graduates from universities abroad. According to the researchers, few studies define demographic background during housemanship—researchers' respondents' background individualities are essential. Bleakley (2020) discovered that female trainee doctors preferred acquiring knowledge by theories to preparation whenever it relates to gender factors. Lindberg (2020) reported that male trainee doctors participated more actively in learning through

practice. There are no substantial gender differences in predicting trainee doctor performance during housemanship. Previous studies concentrated on gender differences rather than further variables like maturity and circumstantial education. This involves age-related issues. Based on the findings, most trainee doctors have a parallel age-related.

Table 1. Demographics of Respondents

Demographic Factors		**Frequency (*f*)**	**Percentage (%)**
Gender	Male	52	**51**
	Female	50	**49**
	Total (*N*)	102	**100**
Age	21 to 25 years	54	**52.9**
	26 to 30 years	40	**39.2**
	31 to 35 years	8	**7.8**
	36 years above	0	**0**
	Total (*N*)	102	**100**
Marital Status	Single	71	**69.6**
	Married	31	**30.4**
	Total (*N*)	102	**100**
Qualification of Degree	Local University	68	**66.7**
	Abroad University	34	**33.3**
	Total (*N*)	**102**	**100**

Objective 1: The Level of Learning of Trainee Doctors during Housemanship

The research results are displayed in Table 2, indicating the experience level of trainee doctors' learning. Seventy-nine respondents (77.5%) reported a high level of experiential learning. Only twenty-three of the respondents (22.5%) indicated that it controlled the retiring learning experience. The researchers also initiated that all respondents acquired significant experiential learning. It was efficaciously confirmed that both of the respondents performed well. The overall level of experience learning was 3.91, with a standard deviation of 0.403. The success of experiential learning is correlated to instinctual feelings and beliefs (Reed et al., 2007; Richardson et al., 2021). These research investigations recommend that student medical professionals use internal responses to acquire competence (Lewis et al., 2024). This occurrence was defined by an emotional evolution triggered by increased self-confidence in accomplishing a task. According to Cook, Levinson, and Garside (2011), unskilled, invisible, and insecure people show up while performing activities or communicating. That aspect contributes to every experience as an involvement and contribution to each learning experience. Significant experiences are invaluable, and performance is a foundation for new learning. This concisely demonstrates that the respondents can manage experiential learning. It also determines instructive experience. This indicates the trainee doctor's excellent responsiveness and utilization of talents. According to Kolb (1984), adaptation and assimilation indicate an individual's capability to acquire knowledge during the experiential phase with one alternative. The findings of this study prove that to achieve competency, trainee doctors utilize feelings and instinct-based learning. These studies also demonstrate that trainee doctors have a positive attitude towards learning. This is due to their increased curiosity in learning and their confidence in their abilities. This advocates that engagement could improve the inclusive experience. Furthermore, Cook, Levinson, and Garside (2011) contend that student participation may transpire in the learning environment's development.

Table 2. Levels of Experience Distribution

Mean Score Range	**Level**	**Frequency (*f*)**	**Percentage (%)**
3.68 – 5.00	High	79	77.5
2.34 – 3.67	Moderate	23	22.5
1.00 – 2.33	Low	0	0
Total (*N*)		102	100
Mean	3.91		
Standard Deviation	0.403		

Table 3 displays the outcomes of trainee doctors' conceptual learning. It was discovered that 81 people (70.59%) experienced a high conception rate. Thirty respondents achieved a moderate level of conceptual-based learning. The researcher concluded that experiential learning is only high to moderate. This demonstrates that every respondent has good experiential learning. Overall, respondents provided an average score of 3.88 on a scale of one to ten, with a standard deviation of 0.402. The efficiency of trainee doctors is evaluated using generalized thoughts and ideas to develop conceptual understanding. Conceptual means the output of ideas. Efficiency and thinking are critical in ensuring the

concept's criticality, creativity, and significance (Scholtens et al., 2023; Usha et al., 2024). To be competent, trainee doctors must apply ideas and thinking in the context of conceptual learning. Conceptual is a required component. These are both essential and indicative of one's ability. According to O'Neill et al. (2011), thinking teaches people to be more creative and critical in various situations. Through conceptual and theoretical learning, you must consult experts to certify that the information you acquire is correct. Microbusinesses continue to value conceptual empowerment as a tool for employees' professional and organizational development. Understanding cannot be assessed through dialogue or engagement but can be realized in the qualities that emerge (Nor Shela & Hashim Fauzy, 2015; Mishra et al., 2020). The researcher discovered that this study's respondents have a high conceptual level. No one of the participants received a low score. This demonstrates that they were well-trained and educated in medical information while attending on-campus classes. As a result, conceptual grasp must be sustained through continuous training and learning.

Table 3. Conceptual Levels Distribution

Mean Score Range	Level	Frequency (*f*)	Percentage (%)
3.68 – 5.00	High	81	70.59
2.34 – 3.67	Moderate	30	29.41
1.00 – 2.33	Low	0	0
Total (*N*)		102	100
Mean	3.88		
Standard Deviation	0.402		

Table 4 depicts one of the learning models studied, experimentation-based learning. These findings differ significantly from what we have learned in the classroom. This is because the number of respondents who achieved a high level exceeded the two thresholds. 89 respondents achieved a high level, scoring 87.25 percent. Only 13 people (12.7%) scored in the moderate range. On the other hand, none of the respondents claimed to have conducted a low level of exploration. After comparing experience and conceptual levels, experimental findings had the highest mean score of 4.12. The standard deviation is 0.545. According to Frank and Mikhael (2010), experimentation is learning that produces results. A task is measured in terms of both quantity and quality. However, in experimental learning, task quality is a significant consideration. In addition, the trainee doctor is responsible for ensuring that competent services are provided. Razack et al. (2013) and Young et al. (2023) emphasized the importance of high credibility for trainee doctors who actively conduct research using holistic and optimal thinking throughout experimental learning. This participation influences both intellectual and experiential learning. This is due to the adoption of more pragmatic thinking. As a result, it broadens the definition of thinking to include a high level of comprehension in learning through action and mental engagement and the creation of expressive experiences. This demonstrates the value of experimental learning. Indeed, this researcher discovered that 89 trainee doctors conducted extensive experiments. Only 79 and 81 respondents performed well in both experiential and conceptual learning. As a result, experimental learning is the most significant feature to apply professionally. This is due to the assessment and intelligible standards. Experimental learning is considered incompetent because it is accepted in a representative way and observed (Milota et al., 2019; Wainwright et al., 2022).

Table 4. Experimentation Levels Distribution

Mean Score Range	Level	Frequency (*f*)	Percentage (%)
3.68 – 5.00	High	89	87.25
2.34 – 3.67	Moderate	13	12.75
1.00 – 2.33	Low	0	0
Total (*N*)		102	100
Mean	4.12		
Standard Deviation	0.545		

Tables 2–4 show the results of the study's first objective. Based on the mean values obtained, 3.91, 3.88, and 4.12, the researcher determined that the trainee doctors demonstrated a high level of learning in the three areas evaluated: experience, conceptual, and experimentation. Experience can be confidential as an important finding because it has an emotional component in perceiving positive improvements in learners' growth. Bullock (2014) exposed that trainee doctors are more dedicated and confident in activities during training due to their experience. Knowledge is essential for simplifying the acquisition of experience. According to Dohn's (2011) study, trainee doctors consider that their cognitive abilities improve as they gain more experience. Knowledge reflection is critical to effecting experience change. This is because knowledge reflection is one factor contributing to the engagement of experiments. Experimentation is a vital learning consequence that should be accredited.

Furthermore, trainee doctors' necessity harvests high-quality effort (Nor et al., 2015; Shariq et al., 2013; Van Assen & J. De Masr, 2019). Experimentation is emphasized by competence, confidence, and the ability to hand over conceptual knowledge in practical circumstances (Cheston et al., 2013; Liang et al., 2023). This demonstrates that three factors are allied, and performance plays an essential role in developing trainee doctor competencies.

Objective 2: The Level of Competence of Trainee Doctors during Housemanship

The findings for the second research objective intention are shown in Table 5. After being equated to the medium level, the number of trainee doctors who acquire a high degree of competence is excellent. This demonstrates that most doctors have grasped housemanship learning. Only 29 respondents have a moderate level of expertise. The researcher discovered that none of the respondents was categorized as having a low competency level. This demonstrates that respondents are proficient. The total value of the findings for the second research objective intention is shown in Table 5. After being equated to the medium level, the number of trainee doctors who acquire a high degree of competence is excellent. This demonstrates that most doctors have grasped housemanship learning. Only 29 respondents have a moderate level of expertise. The researcher discovered that none of the respondents were categorized as having a low competency level. This demonstrates that respondents are proficient. The total value is impressive, with an average mean of 3.44 and a standard deviation of 0.401. Competency values are divided into clusters based on the results of previous investigations. Communication and planning skills are two competencies of student doctors that have been considered previously. Lynch (2019) explains that a trainee doctor must have virtuous planning and communicate efficiently. The planning process considers various factors, including the diagnosis and descriptions of patient problems (Cegala et al., 2009; Cardona et al., 2023). As a result, the arrangement approach in planning should be determined by the conditions and necessities. This stage must certify that tasks are finalized on time and following the conventional aims.

This research also shows that trainee doctors are meticulous in their work. This is because an attentive approach is one of the essential competencies encountered. Trainee doctors' strictness prevents mistakes, dangers, and inefficient movements (Shih et al., 2020). Several previous studies have engrossed in features of assignments while working, according to researchers. Meanwhile, the concept of housemanship learning is more prevalent in this research. According to the findings, most of these talented trainee doctors are incredibly scrupulous in ensuring accuracy and the necessity for housemanship. This could be related to the assessment procedure, which requires trainee doctors to continuously demonstrate high levels of competence, particularly in acting and evading risks while on responsibility. Furthermore, doctors should avoid risk and protect patients from being exaggerated by hazard problems (Skipper et al., 2016). As a result, the value of competence is consistently sustained throughout the job's implementation.

Table 5. Distribution of Trainee Doctors' Competency Levels

Mean Score Range	**Level**	**Frequency (*f*)**	**Percentage (%)**
3.68 – 5.00	High	73	71.57
2.34 – 3.67	Moderate	29	28.43
1.00 – 2.33	Low	0	1.0
Total (*N*)		102	100
Mean	3.44		
Standard Deviation	0.401		

Objective 3: The Relationship between the Level of Learning of Trainee Doctors and Competence

Table 6 shows the study results of the suggestion regarding the level of learning and trainee doctors' competency during housemanship. This study demonstrates a significant positive association between trainee doctor competence and the level of learning. For each teaching, the researcher conducted a diverse analysis. Experimental learning with competence had the highest correlation value of $r = 0.711$, $p<0.00$. Since the level of experimental learning is the highest, the first objective impacted these findings. The experimentation is achievement-based, presenting the output as a learning value (Engestrom & Pyorala, 2020; Skipper et al., 2016; Liang & Noble, 2020). Experimentation is an improved way to evaluate the ability of trainee doctors. The efficiency with which activities are finalized, the quality of task productions, facility perseverance, and voiced engagement are all categories in experimentation. As a result, contributing to competency is simpler.

Experiential learning and competence had the weakest relationship (r = 0.312, p 0.00). External interpretation of experience is challenging. As a result, it becomes one of the reasons for the low correlation. Perceptions and feelings are used to evaluate experiential learning. Devising trainee doctors' perceptions is impossible if they fail to change their learning. One of the reagents for experience while learning is transformation. An association between learning and low competence has been revealed for this motive. Another relationship that has been investigated is the connection between conceptual learning and competence. These findings are slightly significant, with a correlation value of r = 0.547 and a p-value of 0.00. The term "conceptual" applies to theories, philosophies, and ideologies. It is an expression used in the situation of competence. Trainee doctors reach a high degree of competency in planning, communication, teamwork, and the ability to extravagance patients by using impressions. This is due to the conceptual vigour of critical and creative thought assertive to competent defiance.

Table 6. Learning Level and Competence Relationship

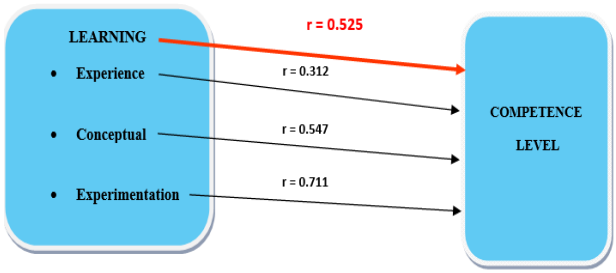
Learning	***r***	**Sig.**
Experience	0.312	0.000
Conceptual	0.547	0.000
Experimentation	0.711	0.000
Overall	0.525	0.000
Result: Hypothesis Rejected		

To fulfil the third objective of the study, the researcher used a combination of all learning and abilities to conduct the analysis. By a correlation value of r = 0.525, p<0.00, these findings show that the null hypothesis was rejected, and the researcher has demonstrated an extensive association between learning and trainee medical competency. Experimental and conceptual learning provision are two variables that contribute to the stable correlation value. Researchers recommend that trainee doctors be more sensitive to the situation and use the experience to support them in achieving their competencies.

Objective 4: A Developing Model Framework for Learning Strategies for Trainee Doctors during Housemanship

For the primary research objective, the researcher formed a model of a learning strategy framework for trainee doctor competencies during housemanship (Figure 1). Exploring the different dimensions of learning will generate ideas for future research, allowing the value of competence to be investigated more methodically and examining the provided conventional capabilities for main revisions of competency categories. This action is crucial for developing holistic, dynamic, and integrity-determined medical professional human capital qualities that will certify the medical sector and sustainability in various situations. This study employs Senge's (1990) approach, which states that environmental factors affecting knowledge and skills influence a person's learning. Researchers have identified the relationship between concepts and experimentation based on previous research and Senge's perspectives. In addition to Senge (1990), this study discusses previous studies that use Kolb's theory (1984). This explanation was provided in the literature review part. Kolb (1984) proposes four stages of learning: experiential, conceptual, observation, and experimentation. However, this study also considers Senge's (1990) perspective, knowledge and skills. Thus, this study emphasizes two important opinions: conception and experimentation. Experience is vital because prior research has shown that experience, knowledge, and abilities influence competence (Long & Gummelt, 2019). Finally, the study employs experience as one of the domains for acquiring housemanship. Correspondingly, researchers implemented competency development for the organizational system, explicitly for supervisors and managers. The supervisor's role is a more decisive practice or interposition because the supervisor appraises trainee doctors' competence.

Figure 1. Model of a Trainee Doctor's Competency Learning Strategy Framework During Housemanship



Conclusion

The study's intentions were satisfied by presenting details about previous investigations. Equivalents and contradictions between previous studies and their application to the study's findings are also explored. The researchers have successfully achieved all objectives using inferential and descriptive analysis

methods. The findings are critical in creating the Trainee Doctor Competency Learning Strategy Framework Model used during housemanship. This research showed that housemanship learning is effective among trainee doctors. Since all the respondents have a high level of knowledge and expertise, they were found to have sufficient knowledge and expertise. It has a significant indirect impact on the model framework's contribution because all learning, including experience, conceptualization, and experimentation, is secured to one's level of competency. These findings are congruent with those of the Dagnone et al. (2020) and Liu et al. (2023) study, which indicated that learning improves medical competence. The trainee doctor develops confidence and competence in performing the task through experimental and conceptual knowledge. Even though the correlation research's results were moderate and produced a moderate value, the obtained results exceeded a partial percentage of the study effect. As a result, this research proves that other aspects need to be studied. This gap practice will guide future research to ensure that the model framework developed is more comprehensive for trainee doctors' training.

Researchers suppose that experience has the learning potential, but it is infrequently customary and contributes the least to competency. Linz et al. (2018) discovered that experience is critical to reaching competency. The experience empowers trainee doctors to reinforce their competency by expanding their knowledge and abilities (Pront et al., 2016; Engestrom & Pyorala, 2020). However, this research is restricted to experience; the researcher trusts knowledge to be conceptual learning and skills acquired through experimentation. Linz et al. (2018) itemized the results of experience in their probability analysis; however, this study is more accurate in theoretically or empirically describing explicit competencies' significant contributions. This study has discovered that trainee doctors learn at high levels in wide-ranging, which is related to competency. However, this research indicates that experiential learning has deficiencies that contribute to an apprentice's medical competency. The prominence of conceptual understanding is equally perilous since it is essential to be of better quality to change the degree of experiential learning.

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