QUESTIONNAIRE TO ASSESS A TEACHER’S PERCEPTION OF THEIR CURRENT PERSONAL COMMITMENT AND PREFERRED FUTURE COMMITMENT TO EACH OF THE EIGHT ROLES: TURKISH VERSION

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ABSTRACT

Introduction: There are eight key roles defined for trainers. The trainer is expected to identify their roles in a training program and maximize their potential. This study aimed to expand the “Questionnaire to Assess a Teacher’s Perception of Their Current Personal Commitment and Preferred Future Commitment to Each of the Eight Roles”, which was developed by Harden and Lilley 2018, and adapt it to Turkish.

Method: The study was carried out in four faculties between 10 December 2018 and 30 August 2019. The original questionnaire, which questioned the roles of an educator over a total of eight items, was expanded in accordance with the source in which it was published. The psychometric analyses of the new scale consisting of 32 items were conducted.

Results: The final version of the scale consisted of 29 items and eight subscales. The scale-based content validity index for the scale was calculated as 1.00. Cronbach's alpha values for the Scale and its subscales were 0.95, 0.67, 0.90, 0.92, 0.87, 0.84, 0.88, 0.90, and 0.78, respectively. The item-total correlations for the scale and the Goodness of Fit model were deemed acceptable.

Conclusion: The scale proved useful as a measurement tool for measuring educators’ current and future commitments to their eight roles. We recommend the scale for educator evaluation, needs assessment, and/or educator development training.

Keywords: Health educators, education, medical, role, nursing, reliability and validity
INTRODUCTION

Ten years ago, Harden and Crosby emphasized in their AMEE Guide No 20 that teaching was a complex task, and they defined a total of 11 roles in 6 areas for educators (The information provider; the role model; the facilitator; the assessor and evaluator; the planner; and the creator and producer) (1). Also, they stated that the model that they presented about the roles of educators was open to constant change and development. Time did not deny the authors in this respect, and with the practices in the medical field, the knowledge and experience of teaching and learning changed in line with the spirit of the time. Today, information and experiences on health education are shared from all over the world through hundreds of studies published every day. Educators and students can conduct literature review from anywhere; the information is compiled and presented to them by the associations they belong to; they are even provided with news by the journals as soon as information is shared (2,3). Moreover, all of these can be accessed through smartphone applications and even via social media (4-8). New technologies such as virtual reality and 3D (9,10) have introduced new perspectives, approaches, and applications to health education including interprofessional practices for patient well-being (11-13), monitoring of corporate development within national and international criteria (14-17), and increased use of social media in medicine and education (18-20).

These changes have also necessitated changes in the roles of health educators. Therefore, ten years after the educational roles had been published, they were re-addressed by Harden and Lilley and redefined (Fig. 1) (8). In their new work, the authors presented an eight-item questionnaire that let

Table 1 Mean rating by 251 educators as to the relative importance of the eight roles of the teacher

| Teacher’s role                                         | Current Mean rating | Future Mean rating | p value* |
|--------------------------------------------------------|---------------------|--------------------|----------|
| 1. Information provider and coach                      | 8.61                | 8.43               | 0.063    |
| (1.1) Conduit for information-transmitting information to the student | 4.31                | 4.18               |          |
| (1.2) Curator of information filtering and making information available | 4.30                | 4.25               |          |
| 2. Facilitator and mentor                             | 20.89               | 22.48              | <0.001   |
| (1.3) Information coach- guiding student to ask the right question, source information and evaluate information received | 4.31                | 4.59               |          |
| (2.1) Clarifying learning outcomes                     | 4.17                | 4.46               |          |
| (2.2) Identifying appropriate learning opportunities    | 4.05                | 4.41               |          |
| (2.3) Making learning effective and efficient          | 4.18                | 4.53               |          |
| (2.4) Engaging and motivating the student serving as a mentor | 4.18                | 4.49               |          |
| 3. Assessor and diagnostician                          | 18.38               | 21.04              | <0.001   |
| (3.2) Plan and implement assessment of for your course learners | 3.87                | 4.22               |          |
| (3.3) Monitor students’ performance and progress        | 3.65                | 4.23               |          |
| (3.4) Decide about learners’ performance and progress   | 3.62                | 4.09               |          |
| (3.5) Provide feedback to students                     | 3.71                | 4.32               |          |
| (3.6) Evaluate and change the assessment where necessary | 3.53                | 4.18               |          |
| 4. Curriculum developer and implementer                | 15.92               | 17.54              | <0.001   |
| (3.1) Be familiar with the school’s approach to assessment | 3.91                | 4.28               |          |
| (4.1) Be familiar with the school's curriculum         | 4.03                | 4.43               |          |
| (4.2) Plan and implement your own course in line with the school's curriculum | 4.18                | 4.51               |          |
| (4.3) Evaluate the curriculum and plan for changes     | 3.80                | 4.32               |          |
educators define their relationships with their roles for the current and future. We believe that the scale will not only direct the educators but also guide the institutions in determining their own educator needs, evaluating educators, and planning educator development training. For this reason, we aimed to expand the "Questionnaire to Assess a Teacher's Perception of His or Her Current Personal Commitment and Preferred Future Commitment to Each of the Eight Roles", which is found in Harden and Lilley's book of the Eight Roles of the Medical Teacher (2018) and adapt it to Turkish in accordance with the book by doing its psychometric analyses. Consequently, we aimed to provide the scale in the Turkish language.

**METHODS**

**Participants**
The study was carried out in four faculties including two medical faculties and two nursing faculties in Turkey between 10 December 2018 and 30 August 2019. There were 541 faculty members in four faculties. In the literature, recruiting at least 10 subjects per item is recommended when determining the number of samples in scale development or adaptation studies (21-23). For this reason, the sample size was calculated as 310 subjects. We aimed to reach to all of 541 educators in four schools.

**Instrument Development**
The original questionnaire measures the current personal commitments and preferred future commitments of educators regarding the eight roles (8). It consists of eight subscales both for current and for the future: including (1) information provider and coach, (2) facilitator and mentor, (3) assessor and diagnostician, (4) curriculum developer and implementer, (5) role model as a teacher and practitioner, (6) manager and leader, (7) scholar and researcher, and (8) professional. Each item is scored on a Likert scale (1 none; 2 little; 3 some; 4 considerable; 5 great). As for the interpretation of the scores, the higher the score obtained for each role,
the higher the commitment of the educator to the relevant role.

Harden and Lilley's original questionnaire consisted of a total of eight items mentioned above. This source containing the questionnaire, presented detailed explanations and diagrams for each role. We added sub-questions to each role in line with these diagrams. These sub-questions were, in fact, expressions which were already placed in the diagrams by Harden and Lilley in the original language of the source. We put these statements in the table exactly as they were without changing them. Thus, we obtained a scale of 32 items in total. We shared this new scale with Harden RM, and then we carried out the validity and reliability analysis after the approval of the author. For analysis, we followed the following steps suggested by WHO: Forward translation; expert panel; back-translation; pre-testing and cognitive interviewing; and final version (24).

**Content Validity**

The scale was translated into Turkish by three different experts. The translated version was finalized by the researchers. Then it was submitted to the views of two field experts. The experts were given the original and the translated form of the scale and were asked to rate the appropriateness of the questionnaire items from 1 to 4. Also, their written recommendations were received accordingly.

**Pilot Study**

The scale was piloted to 30 volunteer educators, who were not included in the sample, in March 2019, and feedback evaluations were done.

### Table 2 Eigenvalue and Factor Loads According to Exploratory Factor Analysis (n= 282)

| Subscales / Items | Eigenvalues | Factor loads |
|-------------------|-------------|--------------|
| **1. Information provider and coach** | 4.279 | |
| (1.1) Conduit for information-transmitting information to the student | 0.842 | |
| (1.2) Curator of information filtering and making information available | 0.663 | |
| **2. Facilitator and mentor** | 3.755 | |
| (1.3) Information coach- guiding student to ask the right question, source information and evaluate information received | 0.701 | |
| (2.1) Clarifying learning outcomes | 0.784 | |
| (2.2) Identifying appropriate learning opportunities | 0.828 | |
| (2.3) Making learning effective and efficient | 0.807 | |
| (2.4) Engaging and motivating the student serving as a mentor | 0.537 | |
| **3. Assessor and diagnostician** | 3.438 | |
| (3.2) Plan and implement assessment of for your course learners | 0.743 | |
| (3.3) Monitor students’ performance and progress | 0.829 | |
| (3.4) Decide about learners’ performance and progress | 0.839 | |
| (3.5) Provide feedback to students | 0.726 | |
| (3.6) Evaluate and change the assessment where necessary | 0.701 | |
| **4. Curriculum developer and implementer** | 2.693 | |
| (3.1) Be familiar with the school’s approach to assessment | 0.545 | |
| (4.1) Be familiar with the school’s curriculum | 0.739 | |
| (4.2) Plan and implement your own course in line with the school’s curriculum | 0.779 | |
| (4.3) Evaluate the curriculum and plan for changes | 0.679 | |
Pilot Study
The scale was piloted to 30 volunteer educators, who were not included in the sample, in March 2019, and feedback evaluations were done. Data collection forms were handed out to the educators by the researchers by visiting each educator’s office and explaining the purpose of the study. The forms were collected after the researchers filled them out. The data form involved “The Questionnaire to Assess a Teacher’s Perception of His or Her Current Personal Commitment and Preferred Future Commitment to Each of the Eight Roles” collecting socio-demographic information about the educators (gender, age, specialty, department, number of educators in the department, working years, the status of participating in educator training) and their perception regarding the roles. Of the 541 trainers in four schools, 282 were reached. The response rate was found to be 52%.

Data Analysis
Descriptive data were analyzed with numbers, percentages, and mean scores. IBM SPSS Statics 24 software package was used for validity and reliability analyses, and LISREL was utilized for confirmatory factor analysis (CFA). Item-level content validity index (I-CVI) and scale-level content validity index (S-CVI) were used for evaluating the content validity. Exploratory factor analysis (EFA) and CFA were employed for construct validity. In the EFA, eigenvalue was taken 1 and greater, and principal components analysis and varimax rotation technique were employed to determine under which factors the items would be grouped. The fit of the construct formed as a result of EFA was analyzed through CFA. The internal consistency was calculated using Cronbach’s alpha coefficient and split-half technique. Item total score and item subscale total score analyses were employed to determine the fit of the items with the overall scale.
We aimed to expand the "Questionnaire to Assess a Teacher’s Perception of His or Her Current Personal Commitment and Preferred Future Commitment to Each of the Eight Roles", which is found in Harden and Lilley’s book of the Eight Roles of the Medical Teacher (2018) and adapt it to Turkish in accordance with the book by doing its psychometric analyses. The permission of the authors of the original questionnaire (included eight items) was obtained by e-mail in September 2018. Later, in October 2018, it was re-approved by e-mail from Harden RM for its extended version to 29 items. Also, the approval of the University Non-Interventional Research Ethics Committee (IRB approval number: 2019/03-35) and the written consent of the participants were obtained.

### RESULTS

Of the educators participating in the study, 57% were female, the mean age was 46.54 (±7.71), 76% were working in the faculty of medicine, 24% were working in the faculty of nursing, and 86% were found to participate in educator training. When the scores given by the educators to their current and future commitment were compared, the future commitment scores were significantly lower for "information provider and coach" roles, while the scores were higher for the rest of the roles (Table 1) ($p < 0.05$).

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**Table 3 Reliability Analysis Results of the Scale (n=282)**

| Item Total Test Correlations of Eight Sub-Dimensions of the Scale | Total Score of the Scale | Cronbach Alpha | First Half Cronbach Alpha | Second Half Cronbach Alpha | Spearman-Brown Guttman Split-half Correlation between two halves | Mean | SD |
|---|---|---|---|---|---|---|---|
| 1. Information provider and coach | 0.95 | 0.906 | 0.922 | 0.913 | 0.910 | 0.839 | 114.20 | 17.76 |
| 2. Facilitator and mentor | 0.67 | 0.90 | | | | | |
| 3. Assessor and diagnostician | 0.92 | | | | | | |
| 4. Curriculum developer and implementer | 0.87 | | | | | | |
| 5. Role model as a teacher and practitioner | 0.84 | | | | | | |
| 6. Manager and leader | 0.88 | | | | | | |
| 7. Scholar and researcher | 0.90 | | | | | | |
| 8. Professional | 0.78 | | | | | | |

**Table 4. Item Total-Test Correlations of Eight Sub-Dimensions of the Scale**

| Number of Items | In Total-Test Correlations |
|---|---|
| IPC1 | 0.44* |
| IPC2 | 0.49* |
| IPC3 | 0.59* |
| FM1 | 0.66* |
| FM2 | 0.68* |
| FM3 | 0.69* |
| FM4 | 0.65* |
| AD2 | 0.71* |
| AD3 | 0.75* |
| AD4 | 0.72* |
| AD5 | 0.74* |
| AD6 | 0.71* |
| AD1 | 0.66* |
| CDH1 | 0.70* |
| CDH2 | 0.64* |
| CDH3 | 0.69* |
| RM1 | 0.55* |
| RM2 | 0.62* |
| RM3 | 0.72* |
| ML1 | 0.68* |
| ML2 | 0.75* |
| ML3 | 0.72* |
| SR1 | 0.72* |
| SR2 | 0.65* |
| SR3 | 0.69* |
| SR4 | 0.63* |
| P2 | 0.49* |
| P3 | 0.48* |
| P4 | 0.56* |
According to the results of the factor analysis, the third item (asking the student the right questions, guiding the students to use the information sources and to evaluate the information they acquired), which had previously been under the “information provider and coach” subscale was transferred to the “facilitator and mentor” subscale. Also, the first item (having information about school's approaches to evaluation), which had been under the "assessor and diagnostician" subscale previously, was moved to "curriculum developer and implementer" subscale. CFA was performed using the 29 items from the EFA (Fig. 2). The goodness of fit model was deemed acceptable (Chi-square min/df = 1.93; RMSEA = 0.058; GFI = 0.86; TLI=0.98; CFI = 0.86 and NFI = 0.97 (24).

**Reliability Analysis**
As a result of the reliability analyses for the eight subscales of the scale, Cronbach’s alpha coefficient
was determined as 0.95. The Cronbach's alpha value of the first half was found as 0.91, and it was 0.92 for the second half. The spearman-brown coefficient was 0.913, the Guttman-Split-Half coefficient was 0.910, and the correlation coefficient between the two halves was determined as 0.839. The mean score of the scale was 114.20 (±17.76). Cronbach's alfa coefficients for the eight subscales are presented in Table 3.

Item-total score correlation coefficients are shown in Table 4. Item 3 (demonstrating the competence expected from a health worker), item 4 (helping students to acquire professional behavior), item 5 (contributing to the creation of a learning environment that supports students' learning) under "Role model as a teacher and practitioner" the subscale and item 1 (exhibiting sensible behaviors and fulfilling professional responsibilities) under "Professional" subscale were omitted from the scale since their total test correlations were below acceptable values. As a result of the removed items, the scale was determined to consist of eight subscales and a total of 29 items.

**DISCUSSION**

The S-CVI value should be greater than 0.80 to claim that there is an agreement between expert opinions. In this study, S-CVI values were found to be greater than 0.80. KMO and Barlett test values indicated that the sample size and data structure was suitable for factor analysis. In the exploratory factor analysis, the eigenvalue was accepted as 1 and above in determining the number of factors (27). Accordingly, eight factors with eigenvalues above 1 were determined in this study. The total explained variance by the eight factors was greater than 60%, which indicated that the scale had a high level of explained variance. The high level of explained variance showed that the scale and the items were able to measure the desired phenomenon adequately and accurately. These results supported the appropriateness of the construct validity for the eight subscales of the scale, which assesses the eight roles of an educator.

In the literature, it is emphasized that when factor groups of the items are being determined, the minimum factor loadings of the items should be 0.30 or above, and the items below this value should be omitted from the scale (24,26). In this study, item 3 (demonstrating the competence expected from a health worker), item 4 (helping students to acquire professional behavior), item 5 (contributing to the creation of a learning environment that supports students' learning) under "Role model as a teacher and practitioner" the subscale and item 1 (exhibiting sensible behaviors and fulfilling professional responsibilities) under "Professional" subscale were omitted from the scale because their total test correlations were below acceptable values. Three items were omitted from the scale because their factor loadings were less than 0.30. Thus, the final form of the scale, which initially consisted of a total of 32 items, involved a total of 29 items with eight sub-dimensions.

As a result of the re-implemented CFA of the 29-item scale, the factor loadings in all subscales were determined to be greater than 0.30. Also, the fit indices (GFI, NFI, CFI, and IFI) were found to be greater than 0.90 and RMSEA was less than 0.080. The division of chi-square value by the degree of freedom was found to be less than five. In the literature, model fit indices greater than 0.90, an X2/DF value less than five, and an RMSEA value less than 0.08 are considered to be a good fit indicator (28,29). CFA results in this study were found to be consistent with the criteria specified in the literature. CFA results showed that the data were appropriate for the model, the eight-factor structure was confirmed, the subscales were relevant to the scale, and that the items in each sub-dimension explained their factor adequately. The CFA results in this study could not be compared to those of the original questionnaire because the analysis was not performed in the original questionnaire (8).

In the literature, Cronbach's alpha coefficient is calculated as an indicator of reliability. When this value is between 0.60 and 0.80, the scale is accepted as very reliable, while a value between 0.80 and 1.00 shows that the scale is highly reliable. The split-half method is one of the recommended techniques for reliability analysis (22,30). In this study, the total Cronbach's alpha, spearman-brown, and Guttman split-half values of the scale showed that the scale was highly reliable. These results showed that the items were related to each other and the subject to be measured, they measured the same structure and that they could do the measurement without errors unless the subjects of the study changed.

Item-total score analysis explains the relationship between the scores obtained from the scale items and the total score of the scale. This value should be positive and greater than 0.20 (24,26). Both item-total
score and item-subscale total score correlation coefficients of the total 29 items were found to be positive and greater than 0.20. These results showed that each subscale of the 29 items in the scale was highly correlated with its total score, they adequately measured the intended quality, and that the item reliability of the overall scale and subscales were high. In the literature, no validity and reliability study of the questionnaire in another language other than the original language of the questionnaire was found; therefore, there was no possibility to discuss similar situations.

The participants were found to give lower scores to “information provider and coach” role regarding their current and future commitment to their roles. This suggested that the participants wanted to highlight other roles rather than information providing.

Study Limitations
The response rate of the study was 52%. Although an acceptable number was reached, it was a limitation in terms of representativeness. Besides, the memory factor may have had a negative effect as the study was conducted only on a questionnaire basis.

CONCLUSION
In conclusion, the Turkish version of “the Questionnaire to Assess a Teacher’s Perception of Their Current Personal Commitment and Preferred Future Commitment to Each of the Eight Roles” was determined to have a high level of reliability and validity. The scale can help educators to do a self-evaluation and to plan their professional development. We also think that the scale can be considered as a guiding instrument for identifying the educator needs of institutions, evaluating the trainers, and even determining the needs for educator training programs.

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