

**RESEARCH ARTICLE :**

Test to measure knowledge level of trainers on andragogy

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SUMMARY : Training is an important activity of human resource development. It is an adult education enterprise. Therefore, characteristics of trainees or adult learners need to be considered by the trainers while conducting training. Therefore, it is necessary for the trainers to possess good knowledge on andragogy. The trainer should act as a facilitator while conducting training. Knowledge on andragogy is an important component of facilitation skills. It helps trainers to conduct the training programme productively. Therefore, it is important to know the level of knowledge of trainers on andragogy. However, little effort is given in this aspect by the training organisation. On the other hand, there is no test readily available to measure the knowledge level of trainers on andragogy. It was thought necessary to construct a test to measure the knowledge level of trainers on andragogy. Therefore, an attempt has been made to develop a knowledge test in this regards. Initially, 60 items were collected and these were examined through 20 experts for its suitability to retain in the knowledge test. Finally, 42 items were taken for item analysis and that was done with the help of 60 trainers. Both indexes of difficulty and index of discrimination were calculated for the items. After calculating index of difficulty and index of discrimination, 17 items were retained for final knowledge test whose index of difficulty ranged between 0.3 to 0.8 and indexes of discrimination was 0.3 and more. The reliability of the test in terms of Kuder-Richarson formula ($K-R_{20}$) was found at 0.73. The test can be utilised by different training organisation for selection of good facilitators. It also helps to identify the training need of the trainers on andragogy, the result of which can be useful to design need based training modules for the trainers training programme.

KEY WORDS:

Andragogy,
Knowledge test,
Trainers, Facilitators

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BACKGROUND AND OBJECTIVES

Training as a non-formal education, improves knowledge, skill and attitude in persons. However, people are not developing these just attending trainings. Trainers should play an important role to make the training effective. According to Combs and Ahmed

(1971) non-formal education, though not a recent phenomenon, has received little attention. However, simply conducting the training is not sufficient for the successfulness of building capacity of trainees (Barman and Kumar, 2013). Training is an adult education enterprise (Kumar and Kashyap, 2005). The principles of pedagogy are not applicable in

case of adult learning. The trainers must act as facilitators in training. Here a trainer arranges the condition to facilitate, rather than transmitting knowledge and skills (Darkenwald and Merriam, 1982). According to Heron (1999) facilitator is a person who has the role of empowering participants to learn in an experiential group. Heen and Stone (2006) mentioned that as a facilitator, trainer has two purposes: helping participants to learn from their experiences, and helping the group to function effectively. The facilitator is a helper, enabler, counselors, encouragers for contribution, stimulator for the process of discussion etc. (Bens and Cameron, 2006). Being a facilitator of training, one should conceptually clear about the principles of adult learning or andragogy (Barman and Kumar, 2011) because adults learn differently. Therefore, trainers' approach and successes are directly depend on that factor too. In the pedagogical model, the trainer has full responsibility for making decisions about the teaching - learning process. This result is a teaching and learning situation that actively promotes dependency on the instructor (Knowles, 1984). Most of the cases the pedagogical model has been applied equally to the teaching of children and adults. However, this model is in reality not suited for adults. Because being a learner they have some specific characteristics. As adults mature, they become increasingly independent and responsible for their own actions. They are often motivated to learn by a sincere desire to solve immediate problems in their lives. The pedagogical model does not suite for such developmental changes on the part of adults (Knowles, 1984). Andragogy as the art and science of helping adults learn has helped to remedy this situation and improve the teaching of adults. Darling-Hammond *et al.* (2006) say that, knowledge needed for instruction is a judgment about what educators must be prepared to do. Hence, they therefore, emphasise that all competent educators must ensure successful learning for the learners who learn in different ways and may encounter a variety of difficulties. Vella (1994) emphasised the value and importance of dialogue between the facilitator of adult learning and the learners.

Smith (2002) reported that andragogy is premised on some crucial assumptions about the characteristics of adult learners that are different from the assumptions about child learners on which traditional pedagogy is premised. Speck (1996) noted that adults would commit to learn when the goals and objectives are considered realistic and important to them. They need to see that

the learning and their day-to-day activities are related and relevant. They need direct, concrete experiences in which they apply the learning in real work. When adult are encouraged to participate actively in the learning activity, then they learn more. Learning takes place when adults' contribution is acknowledged positively; they have the opportunity to apply new learning to different situations. Therefore, the trainers must act as facilitators rather than a subject matter specialist (Barman and Kumar, 2014). To act as facilitator knowledge of andragogy is therefore very much essential. It is so essential to the trainer that they should follow the andragogical knowledge and skills while performing their role (www.rti.gateway.org.in/Documents/.../Role%20of%20a%20Trainer.ppt). For that, purpose trainers should have the knowledge on andragogy. From this background, it is clear that to become a good trainer, he must be a facilitator and for developing, facilitating skill, he should posse's knowledge on andragogy. Therefore, it is necessary to measure the knowledge levels of trainers' on andragogy so that training organizations can identify, right trainers. However, there is no tool readily available to measure the knowledge level of trainers on andragogy. Therefore, an attempt has been made to develop a test in this regards.

RESOURCES AND METHODS

In developing the test, initially 60 items were collected by reviewing the literatures and consulting experts. After that, the items were given to 20 experts to judge their suitability to include in the proposed knowledge test. Based on judges' suggestions, some items were deleted and some were modified. In this way, finally 42 items were retained for item analysis. After that, these items were administered to 60 trainers who were selected randomly. They were requested to give the correct answer for each item whether it is 'true' or 'false'. Scores of '0' and '1' were given to incorrect and correct answers, respectively. All the respondents returned their responses. After that, total score obtained by each respondent was calculated. Afterwards, the total scores of all the respondents were arranged in descending order. As suggested by Singh (2006), 27 per cent of top group was constituted as high group and 27 per cent of the bottom group as low group. After that, index of difficulty and index of discrimination was calculated.

Index of difficulty :

Index of difficulty of an item is defined as the proportion or percentage of the individuals who answer the item correctly (Singh, 2006).

The index of difficulty of an item was calculated based on following formula :

$$P = \frac{R}{N}$$

where, P is the index of difficulty

R is the number of respondents who pass the item

N is the total number of respondents who take the test.

The determination of the index of discrimination is another important aspect in item analysis. According to Bean (1953), index of discrimination is the degree to which a single item separates the superior from the inferior individuals in the trait or group of traits being measured. This index was calculated as per Marshall and Hales (1972) who called this index as Net D index of discrimination. According to them Net D is an unbiased index of the absolute difference in the number of discriminations made between the upper group and the lower group- it is proportional to the net discrimination made by the item between the groups. This method is directly based upon the difference between the proportion of correct answer of the top 27 per cent and bottom 27 per cent individuals (Singh, 2006). The formula for calculating the index of discrimination for the present study was :

$$V_N = \frac{R_U - R_L}{N_U}$$

where V is the Net D

R_U is the number of the individual giving correct answer in the upper group.

R_L is the number of the individual giving correct answer in the lower group

N_U is the number of examinees in the upper group (which is equal to the lower group).

OBSERVATIONS AND ANALYSIS

After calculating index of difficulty and index of discrimination, 17 items were finally selected for the test whose index of difficulty ranged from 0.3 to 0.8 and indexes of discrimination was 0.3 and more. Item with negative discrimination was dropped from the test. In the final test, ten items were positive and seven items were negative.

The reliability of the test was calculated by Kuder-Richarson formula ($K-R_{20}$). Reliability is the accuracy or precision of a measuring instrument (Kerlinger, 2004). The reliability of the present test was found at 0.73, which was considered to be sufficient for this type of test considering the newness of the test (Singh, 2006). The validity of the test was obtained in terms of content validity. It is the representativeness or sampling adequacy of the content-the substance, the matter, the topics- of a measuring instrument (Kerlinger, 2004).

For the categorisation of respondents based on knowledge level on andragogy, score one or zero will be assigned to the respondents. For every correct response respondents will get '1' score and for every incorrect response they will get '0'. Finally, the respondents will be categorised into five groups based on total scores obtained by them as given in Table 1. The final knowledge test along with item analysis results is presented in Table 2.

Knowledge on andragogy of trainers plays an important role in making training programme effective. To act as a facilitator, trainers should have sufficient knowledge on this subject. Hence, the present test developed to measure the knowledge level of trainer on andragogy will help to identify the right facilitators for training. This test can also be used to assess the trainers' training needs on andragogy. It will help different trainers' training institute to design the training module to train the trainers on andragogy. Ultimately, it will serve to get a training programme effective.

Table 1 : Scoring procedure of making categories of trainers based on level of knowledge on andragogy

Sr. No.	Category	Score range (%)
1.	Poor level of knowledge	Up to 50
2.	A fair level of knowledge	51 to 60
3.	Good level of knowledge	61 to 70
4.	Very good level of knowledge	71 to 80
5.	Excellent level of knowledge	Above 80

Table 2 : Results of item analysis to construct knowledge test of trainers on andragogy

Sr. No.	Item	Index of difficulty	Index of discrimination	Correct response
1.	Trainees commit to learn when the goals are important to them.	0.9	0.5	True
2.	Trainees resist learning activities they believe an attack on their competence.	0.4	0	True
3.	Experiences of trainees are not important for application of learning in real work.	0.8	0	False
4.	Trainees have self-ego.*	0.7	0.5	True
5.	Trainees need not to participate in small-group activities during learning.*	0.8	0.3	False
6.	Transfer of learning is automatic for trainees.*	0.6	0.3	False
7.	Trainees prefer learning situations, which are problem-centred.	0.8	0.1	True
8.	It is essential to provide new knowledge to trainees rather to integrate new ideas with existing knowledge.*	0.7	0.3	False
9.	It is not necessary for trainees to relate what is being learned to their personal experiences.	0.8	0.1	False
10.	Information for trainees should be problem-centred rather than content-oriented.	0.9	0.2	True
11.	Each trainee has a unique experience.	0.9	0.3	True
12.	Experiences of trainees sometimes act as a barrier to learning.*	0.8	0.4	True
13.	Trainees must see a reason for learning something.	0.8	0.1	True
14.	Learning has to be applicable to the trainee's immediate situation.*	0.8	0.4	True
15.	Trainees focus on aspects most useful to them in their work.*	0.8	0.3	True
16.	Trainees are interested in knowledge for its own sake.*	0.5	0.7	False
17.	Trainees learn when information is related and relevant to their daily life.*	0.8	0.4	True
18.	Feedback should be given to trainees immediately after performance.*	0.8	0.4	True
19.	Trainees should know why they are learning something.	0.9	0.3	True
20.	Trainee's sense of self-esteem is not a motivator for knowledge.	0.7	0	False
21.	Trainees prefer multiple concepts to relevant problems during learning.	0.3	0	False
22.	It is not necessary to provide opportunities for trainees to work together.*	0.7	0.4	False
23.	Trainees learn easily when their needs are honoured.	0.9	0.3	True
24.	Trainees learn when their achievements are acknowledged.	0.9	-0.1	True
25.	Trainees take responsibility for their own learning.	0.6	0.1	True
26.	Trainees have a desire to share their experience in the group.	0.9	0	True
27.	If given opportunities, trainees are willing to invest their experience in learning process.	1.0	0.1	True
28.	Trainees tend to take fewer risks.	0.9	0	True
29.	The trainer should guide the trainees to their own knowledge rather than providing knowledge.	0.4	0	True
30.	Trainees rely on trainer to direct the learning.	0.3	-0.2	False
31.	Trainees need not to be free to direct themselves for learning.*	0.8	0.4	False
32.	Trainees want to discuss those points, which are immediately needed for them.	0.9	0.3	True
33.	People have different learning styles and the trainer should act accordingly within a training session.*	0.8	0.6	True
34.	Ignoring the trainee's experience means ignoring them personally.	0.9	0.1	True
35.	The trainer should allow the trainees to identify their own learning needs.	0.9	0.2	True
36.	The trainer can create a comfortable physical learning environment.	0.9	0	True
37.	The trainer should identify the expectations of the trainees.*	0.8	0.3	True
38.	Every trainee has a different situation so we cannot solve problems of every trainee.*	0.6	0.3	False
39.	Trainees share their views when the topic is related to life.*	0.7	0.8	True
40.	If a view is rejected, no trainee will cooperate in group.*	0.4	0.6	True
41.	Every trainee has a unique experience.	1.0	0.1	True
42.	Trainees learn readily if their situations demand that.	1.0	0	True

NB. Items with "*" marks (total 17 nos.) were selected for final knowledge test.

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