

# Construction and Standardization of Professional Development Index Scale (PDIS)

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## ABSTRACT

*Realising the significance of professional development as a growing area of interest for practioners, researchers and policy planners, the investigators have chosen to work in this field. The present paper is based on the construction and standardization of Professional Development Index Scale. The first part of the paper gives the historical perspective and theoretical framework and the next part carries the details regarding the process of construction of the scale. The standardization part includes details regarding estimation of reliability, validity and norms.*

**Key words:** *Professional Knowledge, Professional Practice, Professional Commitment, professional Ethics.*

## Introduction

The term profession has emerged out of a Greek word “Professio” meaning ‘to advocate’, ‘to put forth new knowledge’ ‘to bring about something new’. As such a profession is an activity that brings out something new. **Marshal (1963)** has observed that a profession is a relationship between an expert and an ignorant client.

The parameters necessary for a professional are:

1. Professional should be an expert in his/her field of work and should always continuously add to the store house of his/her knowledge. She/he should always be epistemic i.e. he/she should never be satisfied with the boundaries of his acquired knowledge.
2. Professional must always be sincere to his clients/students.
3. Professional should always have specificity in his/her work.

A Profession is a self-selected, self-disciplined group of individuals who have declared themselves out to the public as possessing a special skill derived from education and training and who are prepared to exercise that skill primarily in the interests of others.

There are several listings of characteristics or distinguishing marks of a profession such as:

1. A profession involves activities essentially intellectual.
2. A profession commands a body of specialized knowledge.
3. A profession requires extended professional (as contrasted with solely general) preparation.
4. A profession affords a life career and permanent membership.
5. A profession sets up its own standards.
6. A profession exalts service above personal gain.
7. A profession has a strong, closely knit, professional organization.

Certainly teaching meets this criterion. Because it involves activities that are predominantly intellectual in nature, and the work performed by its members is basic to the preparation for all other professional endeavours. Teaching is sometimes referred to as the “mother of professions”. Teaching as Profession is the body of knowledge, a set of attitudes, codes of ethics and a technique, which is applied to the service of mankind through an educated group. Professional development is a continuous process of acquiring new knowledge and skills that relate to ones profession. Professional Development refers to the skills and knowledge attained for personal development which helps to build and maintain morale of the teacher in an educational system.

In the present century, knowledge explosion takes place at a rapid speed. New Concepts and Methodology are introduced. Teachers should be aware of latest development in an educational system. Teacher who attend professional developmental programmes are more inclined to adopt techniques and resource material with their students. Professional Development in the broad sense refers to the development of a person in his or her professional role. More specifically teacher development is the professional growth of a teacher achieves as a result of gaining increased experience and examining his or her teaching systematically (*Glatthorn-1995*). The NPE-1986 opened a new concept for the professional development of teachers. The NPE-1986 recognizes the need for improving the status of the teacher; it has made a pointed reference to the crucial link between teacher’s motivation and quality control in higher education. It has been now universally realized that for academic excellence, the teachers must be provided opportunities for his/her Professional Development and career advancement.

The notion of teacher professionalism is closely related to professional development (*Evans, 2008; Hargreaves, 2001*). *Guskey (2002)* has argued that “high quality professional development is a central component in nearly every modern proposal for improving education. Policy makers increasingly recognize that schools can be no better than the teachers and administrators who work within them.” *Day et al. (2007)* as well as other researchers (*Bredseson, 2002; Hargreaves, 2001; Webb et al., 2004*) has found that teachers have reported the continuing learning as the most important factor of their professionalism. *Gibbs and Coffey (2004)* in their study of the effectiveness of University teachers training involving 22 Universities in 8 countries report that centralized training programmes provided a kind of alternative culture that counter balanced the negative influences of the culture of teachers’ departments. *Zembylas (2003)* has indicated that teacher’s personal and professional development is deeply affected by their positive and negative emotions *Supovitz and Turner (2000)* report that data from the US National Science Foundation Teachers Enhancement Programme show that the degree of professional development to which teachers are exposed is strongly linked to both inquiry-based teaching practice and investigative classroom culture.

*Malcolm and Zukar (2000)* by employing a formative taxonomy of professional development practice for new higher education teachers, the paper concludes by emphasizing the need to maintain ‘cross-sector’ learning between centralized communities of practice in the pursuit of teaching and learning improvement and innovation.

### **A.1 Objective**

To construct and standardize Professional Development Index Scale (PDIS) for Teachers of Higher Education

### **A.2 Defining and identification of the areas of the scale**

In pursuance of the decision to construct PDIS, the researcher made an exhaustive review of literature to decide upon the area as well as the statements under each of these areas. A few experts in the field were also consulted for expert opinions and discussions were held with few educationists to obtain the functional conditions of what teachers need to do to develop professional excellence in them. The researcher after consultation and discussion with a few experts, decide to have five major areas of the scale namely:

#### **i. Professional Knowledge and Allied Areas:**

Professional Development is no longer viewed as just consisting of a standardized, explicit and fixed knowledge base. It is now seen as knowledge, which exists in use, is ethical in its use and is changed by

experience. The distinctive nature of professional knowledge lies in the interplay between its construction and use. Professional knowledge grows understanding, which includes effective pedagogy and best practices to reflect new understanding and contexts. Nature of professional knowledge is organic and evolutionary, reflecting a synthesis of research, experiences gained and expertise shared. Each profession requires positive attitude for its success. To develop a positive attitude the prospective recruitment has all the in-depth knowledge, understanding as well as favourable interest in order to enjoy the fruits of profession. When the conditions have changed at a fast pace on the brink of this century, the teaching profession has also faced many challenges and transformation. Along with the current sophistications and technological innovations the teacher has more prestigious place within the school premises.

Advances in technology puts heavy demands on teacher to be literate in the digital world and apply it in the practical situation like how to implement technology-enabled global education that reinforce the development of 21<sup>st</sup> century skills in students. In spite of all the changing waves in educational scenario still there are two fundamental principles of teaching and learning exist to which a teacher adheres with. These are maximum retaining of the learning and mastery over teaching through mass media. Items related to effective pedagogy and best practices to reflect new understanding and contexts are included in this area.

#### **ii. Training and Development:**

The quality of a nation depends on the quality of its citizens; the quality of its citizens depends on the quality of their education. The quality of their education depends on the quality of teacher and the quality of a teacher can be more effective if he is trained with different skills of teaching and effective teacher can mould the entire education system in a positive direction, provided he gets a proper orientation and an opportunity to upgrade his knowledge and skills on a continuous basis. Training and development involve improving teacher's present skills and development concerns preparing personnel for additional responsibilities or advancement in organization. Orientation programmes envisaged under Academic Staff College intend to inculcate in young teachers/lecturers the quality of self reliance through his awareness of social intellectuals and more environments. It enables the teacher to discover himself and his potentials through a positive appreciation of his role in social, intellectual and moral universe. The orientation programme further engender in the teacher awareness about the problems Indian Society is facing and made him aware of the role of education in the resolution

of these problems as well as in achievement of goals set out in Indian Constitution. The ASC's conducted three types of programmes orientation programmes attempt to inculcate certain teaching, research, extension and managerial skills among college and varsity teachers. The second type of programme organized by ASC is refresher courses which strive to help teachers to update and equip them with the latest development in teaching methods, pursue research and find out solution to societal problems. ASC's also organizes seminars for college principals and educate them about the fundamentals of college management, efficient financial management, impartial evaluation etc. This area includes the statements / items pertaining to the impact of orientation programmes and refresher courses on the Professional Development of Teachers.

### **iii. Teaching Competences and Professional Practice:**

Teaching competences goes beyond the simple acquisition of knowledge and skills. Although, curricular knowledge and pedagogical skills are important Teaching is both an intellectual and practical activity with important emotional and creative dimensions. The competences are not to be viewed as discrete skills, which once demonstrated are mastered for all time. They are rather the acquisition on a continuum reflecting the dynamic interplay between the nature of professional knowledge and opportunities afforded to teachers by the context of their school and professional lives.

Therefore the teacher should:

- develop knowledge and understanding of contemporary debates about nature and purpose of education and the social and political contexts, in which aims of education are defined and implemented
- develop knowledge and understanding of curriculum development processes, including planning, implementation and evaluation
- develop knowledge and understanding of factors that, promote learning and positive behaviour
- develop knowledge of use of technology effectively

The process of reflective practice is an important component in education system. Through reflection, teachers examine the wider context of their teaching, analyzing the effectiveness of a lesson and how more effective learning can take place in the future. Reflective practice needs to be internalized as a part of a teacher's professional identity. It cannot be considered as an additional skill. Rather it is a part of professional mind set and integrated within the competencies in a holistic way. The concept of a reflective and activist practitioner sees teacher as a moral agent and an informed, knowledgeable practitioner.

This area includes the statements pertaining to the development of knowledge and understanding of curriculum, planning, implementation, evaluation and factors that promote learning and positive behaviour.

#### **iv. Professional Commitment**

Teaching is a complex and demanding profession. The level of teacher's commitment is considered to be as a key factor in the success of current educational reform agenda as it heavily influences teacher's willingness to engage in cooperative, reflective and critical practice. Professional commitment refers to a mindset reflecting loyalty and willingness to give all to particular person, principle or plan of action. In this area, statements on teacher's professional commitment may be reflected with reference to the following dimensions of his role/obligation:

- a. *Commitment towards learner/student* – including readiness to help learners and concern for their all round development.
- b. *Commitment towards profession* - It refers to teacher's commitment to his profession e.g. a sense of pride in his profession and commitment to his professional associations.
- c. *Commitment towards Basic Human values* - Including the role model aspect comprising genuine practice of professional values such as impartiality, objectivity, intellectual honesty, national loyalty etc with consistency.

#### **v. Professional Ethics**

Professional ethics of teaching profession expects a teacher to fulfill professional obligations/responsibilities with honesty and integrity. A code of conduct is sophisticated version of do's and don'ts. On the other hand professional ethics give certain set of broad principles, derived from deep values and reflection on the nature and role of profession in the society. Code of professional ethics is adopted as a guide by teachers. They apply to all the persons engaged in the professional aspects of education at elementary, secondary and college level. The codes formulated in teaching profession, prohibits its members from engaging in undesirable behaviour that can bring profession into trouble. The following codes of ethics are in the teaching profession that guides in their conduct with others.

- a) *Towards students* – As a teacher, he/she should understand them, be just and courteous, promote a spirit of enquiry, fellowship and joy in the students. The teacher should inspire students and work with them to create and maintain a pleasant and attractive learning environment.

The teacher should recognize the difference among students and seek to meet their individual needs.

- b) *Towards parents* – The teacher should make friendly and informative contacts with the parents. Parents and teachers can help each other in understanding the personality of the child. Their combined knowledge can help in the overall development of the child. Therefore, the teacher keeps the parents informed about the progress of their child and also discreet the information received from the parents.
- c) *Towards Society* – Education is the most effective way to make relationship between parents and students friendly and cooperative. The teaching profession occupies a position of trust of the society. The teacher should set an example in citizenship by performing the duties and participating in community activities. And also to promote the public good and uphold dignity of the society.
- d) *Towards Administration* – A teacher also establishes an agreeable relationship with school supervisors, administrators and the board of education. The teacher should perform hi/her duties and support school policies and also interpret them intelligently. The teacher should cooperate with school officials in an effort to improve learning opportunities. This area includes the statements pertaining to the professional ethics in the teaching profession towards Students, Parents, society and Administration.

### A.3 Development of the Scale

Professional Development Index Scale (PDIS) has been developed in accordance with the standard procedure of test construction. The Professional Development Index Scale consists of various dimensions viz Professional Knowledge and allied areas, Training and Development, Teaching competences and professional practice, Professional commitment and Professional Ethics. The details about various steps involved in the construction of the test are reported as under:

- i. Pooling of Items.
  - ii. Initial Format
  - iii. Expert Ratings
  - iv. Final Format
  - v. Standardization
- i. *Pooling of Items*: The investigator reviewed the literature and other relevant material related to professional development. The items obtained from the relevant material were drafted keeping in view the objectives

of the present scale constructed. Thus, 78 items distributed over the following areas were pooled:

S. No.	Areas	No. of items
1	Professional knowledge and allied areas	14
2	Training and development	18
3	Teaching competences and professional practice	16
4	Professional commitment	17
5	Professional ethics	13
<b>Total</b>		<b>78</b>

*Initial Format:* After going through the related literature and tools available to assess the professional development index and in consultation with supervisor, the initial format of professional development Index Scale of the Higher education teachers was formulated.

- ii. *Expert Rating:* The copies of the Professional Development Index scale (initial format) were given to twelve experts who were well versed in teaching and construction of tests with a request to review the statements and evaluate their content in terms of accuracy and coverage, editorial quality. The suggestions for additions, deletions and modifications of items were also sought from the experts.
- iii. *Final Format:* Based on suggestions, comments and 80% agreement among the experts 40 items were chosen to be included in the final format.

S. No.	Areas	No. of items
1	Professional knowledge and allied areas	09
2	Training and development	07
3	Teaching competences and professional practice	08
4	Professional commitment	08
5	Professional ethics	08
<b>Total</b>		<b>40</b>

- iv. *Standardization:* The scale has been standardized by estimating reliability and validity of the scale

#### **A) Reliability**

The reliability of the scale has been estimated by the following methods:

##### **I) Split-half Method:**

Two halves prepared on the basis of Upper-half and Lower-half items were administered on a group of 100 teachers at higher education level. After scoring, a coefficient of correlation was worked between two sets



of scores obtained for two halves. The following results were obtained from the two halves:

- a) *Split-half (Upper Lower) 0.73* (after applying Spearman man –Brown prophecy formula).

For determining Odd-Even Reliability Index, two halves were prepared on the basis of alternate item in each area. The following results were obtained on correlating the two sets of scores.

- b) *Split-half (Odd Even) 0.64* (after applying Spearman–Brown prophecy formula)

II) *KR-21 Formula:*

The coefficient of correlation worked out as per Kuder-Richardson Formula No. 21 came out to be 0.704 (N=100).

**B) Validity**

The validity of a test represents the extent to which a test measures what it purports to measure. In simple words, it tries to answer the question; does the test really measure the characteristics that it is being used to measure? There are many names used to describe the different kinds of validity. In the present study the following types of validity have been established for the scale.

- I) *Content Validity:* The scale was developed keeping in view all the necessary requirements. The scale has content validity as the areas of the scale and the statements under each area were fully adequate, representing the behaviour domain to be measured. This was further authenticated by the available related literature in the area and the views of the experts.
- II) *Construct Validity:* A 6x6 correlation matrix (with N=100) was worked out. The result showed the coefficients of correlation are positive, high and significant. This is an indirect estimate of construct validity. The matrix is presented as under:

Correlation coefficient(Pearson)						
Areas	A	B	C	D	E	Total
A	--	--	--	--	--	.736**
B	.180	--	--	--	--	.525**
C	.425**	.175	--	--	--	.745**
D	.419**	.107	.499**	--	--	.668**
E	.531**	.203*	.412**	.386**	--	.736**
** Significant at the 0.01 level						
* Significant at the 0.05 level						

#### A.4. Description of the Inventory

PDIS has been developed to assess Professional Development of Teachers at Higher Education Level in the areas of A (Professional knowledge and allied areas), B (Training and Development), C (Teaching Competences and Professional Practice), D (Professional Commitment), E (Professional Ethics). The scale consists of 40 statements. Each statement is suffixed with a 03 point scale Yes, Uncertain and No. The distribution of the items in the five areas is given as under:

Areas	Item No.'s	
<i>A</i>	10,11,14,16,21,22*,24*,27,39	=09
<i>B</i>	2,5*,6*,9,23*,31*,40,	=07
<i>C</i>	12,13*,15,17,20,29,34,36	=08
<i>D</i>	1,3,7,26,28,32,35,37,	=08
<i>E</i>	4,8,18,19,25*,30,33,38	=08

The statements with \* mark in the above distribution of items are the negative statements.

S. No.	Statements	Yes	Uncertain	No
1a	Methods and techniques of Pedagogy make the teaching learning process more effective			
2b	Attending training and development programmes enrich ones domain knowledge and allied skills.			
3c	The nature of professional Knowledge is organic and evolutionary reflecting a synthesis of research, experience gained and expertise shared.			
4d	A good teacher should always support the students when they are in hardship.			
5e	Teacher should be a role model for his students.			

#### Scoring

Each item of the scale is provided with three alternative responses namely: Yes, Uncertain and No. An item answered as 'Yes' is scored '1', an item answered as 'No' is scored '-1' and an item answered as 'Uncertain' is scored '0'. The theoretical range of score is from 0 to 40.

There is no time limit. However it has been seen that the subjects fill in their responses to the items of the scale within a maximum time of 30 minutes. The scoring of the scale is done according to the scoring key available to the author. Lowest score on the scale implies low cognizance of the professional development and higher score means high cognizance of professional development by a teacher.

## Norms

The following norms to classify the subjects into various categories are based on the total score of the inventory.

Categories	Range of scores
Excellent	36 and Above
Very Good	32-35
Good	28-31
Fair	24-27
Poor	Less than 23

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