

Exploratory Factor Analytic Approach to Needs Assessment of Beginning Teachers

Arvina D. Sarmiento, MAEd, LPT

Mabalacat City College

In an effort to help beginning teachers succeed, a propose Induction Module was created to fight unforeseen problems. The main difficulties are environmental in nature: (1) management and organization when dealing with students; (2) teaching strategy; (3) rights of teacher and (4) well-being of a teacher. Induction Module is a formal, systematic effort to provide ongoing assistance to the new teachers during the induction period. The program relies on the use of mentors and direct needs assessments. Many types of assistance may include providing helpful information about specific responsibilities, the college, the community, policies and procedures and the curriculum. Celebrating the beginner's arrival, establishing rapport and providing an orientation are also very helpful. The program also provides ongoing assistance, ranging from providing moral support to conducting seminars. To assess the overall value of the program and to make necessary changes, an evaluation is suggested.

Keywords: induction module, teaching strategy, rights of a teacher, well – being of a teacher

Introduction

Schools worldwide familiarize new instructors in their first years of teaching by way of contributing to their sense of well-being and professional development (Partlow, 2006). As beginning professionals, they should know the legal bases of education, its programs and projects. They must be clarified about the rights, responsibilities and accountabilities as instructors. It is important that beginning instructors internalize their roles, rights, obligations and accountability that must be performed (Nicodemus, 2011).

Though teacher induction has been described and discussed since 1950s (e.g., Amar, 1952), it is only in the 1980s – 1990s that teacher induction has received serious attention in research and the literature. Many researchers began to describe the sudden and sometimes dramatic and traumatic experiences of the transition from being a student to becoming a teacher (e.g., Corcoran, 1981; Rosenholtz, 1989; Veenam, 1984).

The attention for teacher induction has increased spectacularly not only in research but also in practice. Smith and Ingersoll (2004) showed the developments in the use of induction programs in the USA from 1990 to 2000. In 1990, about 40% of beginning teachers reported being supported with a formal induction program while in 2000 this number had risen to about 80%.

An important reason to invest in induction programs is to sustain the professional development of beginning teachers not only to help them survive those first years of teaching but also to challenge them in their development as teachers and provide an impetus for continuous growth (Cole, 1994).

Republic Act 10533 or Enhanced Basic Education Act of 2013 Section 7 states that the Department of Education (DepEd) and the Commission of Higher Education (CHED) in collaboration

with relevant partners in government, academe, industry and nongovernment organizations (NGOs), shall conduct teacher education and training programs to ensure that the enhanced basic education curriculum meets the demand for quality teachers and school leaders. Specifically, new teachers shall undergo additional training, upon hiring, to upgrade their skills to the content standards of the K to 12 Basic Education Program (BEP).

The Teacher Education Council (TEC), created by virtue of republic Act 7784, is mandated to strengthen teacher education in the country. One of its directives, as stipulated in Section 7 – F of the RA, is to design collaboration programs and projects to enhance preservice and in-service teacher training, orientation and teacher development.

Understanding the needs of the beginning teacher is another area of research that has influenced the development of teacher induction programs. Research has found that beginning teachers have predictable concerns about management, curriculum and assessment practice. They have to build efficacy about their abilities to solve problems and work independently of mentors. And most of all they have a need to communicate with other teachers about teaching in a risk-free environment, and observe other teachers teaching. They need many opportunities to develop proficiency (Burke, Fessler & Chrisensen, 1994; Peterson & Comeaux, 1997; Darling-Hammond, 1997) as cited by Nicodemus (2011).

The process through which an employee learns and adapts to a new position in an organization is often referred to as organizational socialization (Chao, O’Leary Kelly, Wolf & Klein, 1994). This process focuses on the ways an employee learns the culture, values, rules, skills, expectations and other information necessary to effectively execute his/her position within an organization (Van Maanen & Schein, 1979).

Support and assistance for newly-hired teachers have positive impacts on three sets of outcomes: first, on teacher commitment and retention; second, on the teachers. In the Philippines, Bilbao et al. (2013) recommended the need to induct newly-hired teachers to orient them on the programs and projects of the Department of Education that contributed positively in enhancing teachers’ knowledge, skills, values and commitment to the profession and in improving the student’s learning outcomes.

Several studies show positive effects of induction programs on professional development (Althanases & Achinstein, 2003; Achinstein & Barrett, 2004; Luft & Cox, 2001; Napper-Owen & Philips, 1995), but others show very limited influence or even no influence at all (Carver & Katz, 2004; Glazerman et al., 2008; Strong & Baron, 2004).

This study is of particular interest because it is one of the only studies to differentiate new employee orientation training from initial technical or skill training. Klein and Weaver (2000) examined the effect of attending a voluntary orientation program on the learning of socialization information. In particular this study sought to help employees feel more a part of the organization, become more familiar with the organization’s culture and goals and to educate them on work place principles.

Methodology

Research Design

In answering the research problems posed in this study, the researcher used a naturally-observed, cross-sectional, exploratory research design. The goal of this research was to identify the needs of beginning teachers regarding assistance in various areas and explore the underlying factors beneath these identified needs and finally construct an orientation module based on these factors. In order to do this, the researcher adopted a needs assessment questionnaire (see Instrumentation section) and disseminated it to a chosen sample (see Sample Size section). The researcher then gathered the data from these questionnaires, and used descriptive statistics along with dimension reduction techniques to acquire the needs of the beginning teachers and the underlying factors within those needs.

Respondents

A sample of male and female instructors of varying ages across the five institutes – Institute of Teacher Education, Institute of Hotel and Restaurant Management, Institute of Arts and Sciences, Institute of Computing Studies and Institute of Business Education – were chosen as the participants of this study.

Instrument

A 24-item, self-report, 5-point likert scale adopted from Gordon and Maxey in 2000, which provides an assessment to the need of beginning teachers for assistance across multiple topics was used. A participant would choose a response ranging from little to no need to very high need. A reliability test conducted on the aforementioned questionnaire revealed that the questionnaire has high internal reliability (Cronbach's Alpha = 0.964).

Statistical Treatment

In order to provide answers to the research problems posed in this paper, the researcher relied on the use of descriptive statistics such as measures of central tendency through the use of means, measures of spread through the use of standard deviations and correlation matrices in order to know the perceived needs of beginning teachers. Furthermore, in order to explore the underlying factors within the items of the assessment questionnaire used in the study the researcher employed principal axis factoring using varimax rotations with kaiser normalization.

Results and Discussion

The following tables represent the overall results of the study and were comprehensively analyzed and interpreted with discussion alongside them.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.661
Bartlett's Test of Sphericity	Approx. Chi-Square	2485.089
	df	276
	Sig.	0.001

Table 2. Communalities

	Initial	Extraction
Q1	.968	.718
Q2	.861	.400
Q3	.960	.745
Q4	.871	.397
Q5	.958	.876
Q6	.921	.762
Q7	.952	.687
Q8	.906	.818
Q9	.918	.763
Q10	.964	.778
Q11	.942	.756
Q12	.983	.890
Q13	.819	.401
Q14	.974	.816
Q15	.974	.930
Q16	.958	.731
Q17	.974	.808
Q18	.979	.921
Q19	.986	.895
Q20	.903	.302
Q21	.982	.849
Q22	.987	.936
Q23	.953	.862
Q24	.978	.848

Extraction Method: Principal Axis Factoring.

Factorability Screening

Initially, the factorability of the 24 beginning teachers' needs items was examined. Several well-recognized criteria for factorability of a correlation were used. Firstly, it was observed that all of the items correlated at least 0.4 with at least one other item suggesting reasonable factorability (See Appendix C). Secondly, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.661, slightly above the recommended value of 0.6, and Bartlett's test of sphericity was significant (χ^2 (276) = 2485.089, $p < .001$)

(See Table 1). The diagonals of the anti-image correlation matrix were also all over 0.5 except for item 20 or “Q20: Administering standardized achievement tests”; thus, the researcher decided to exclude this item in the factor analysis (See Appendix C). Finally, the communalities were all above 0.3 (See Table 2), further confirming that each item shared some common variance with other items. Given all these indicators, factor analysis was deemed to be suitable with all 23 items.

Table 3. Rotated Varimax Factor Matrix

Rotated Factor Matrix				
	Factor			
	Management and Organization when Dealing with Students	Teaching Strategy	Rights of Teacher	Well-being of a Teacher
Q1				.723
Q2			.424	.439
Q3		.441		.667
Q4				.452
Q5	.812	.408		
Q6	.703			
Q7	.750			
Q8		.634		.474
Q9		.621		.435
Q10	.836			
Q11	.749			
Q12	.746	.422		
Q13			.524	
Q14	.436	.516	.583	
Q15	.509	.558	.590	
Q16			.582	
Q17		.742		
Q18		.796		
Q19		.798		
Q21			.723	
Q22			.752	.461
Q23		.634		
Q24			.832	

Extraction Method: Principal Axis Factoring

Rotation Method: Varimax with Kaiser Normalization

Principal Axis Factoring

Principal axis factoring was used in this study because the primary purpose was to identify and determine factors underlying the 23 items for beginning teachers’ needs. Initial eigen values indicated that the first four factors explained 58%, 9.3%, 7.1 % and 4.8 % of the variance, respectively. The fifth, six, seventh, eighth and remaining factors yielded eigen values lower than 1 and variances lower than 3%. The solution for the remaining factors (i.e., fifth, six, seventh and eighth) was to examine each using varimax rotations using the factor loading matrix. Results from the varimax rotation yielded a 4 factor solution

with factor 1 (Management and Organization when Dealing with Students) explaining 21.9% of the variance, factor 2 (Teaching Strategy) explaining 20.9% of the variance, factor 3 (Rights of a Teacher) explaining 17.9% of the variance and factor 4 (Well-being of a Teacher) explaining 13.7% of the variance, thus explaining a total of 74.5% of the variance (See Appendix D). Furthermore, in the factor analysis, all the items included in the varimax rotation contributed to a simple factor structure and succeeded in meeting the minimum criteria of having a primary factor loading of 0.4 or above, and were not cross-loaded 0.3 or above. (See Table 3)

Table 4. Descriptive Summary of Factors of Beginning Teachers' Needs

Factors of Beginning Teachers' Needs			
	N	Mean	SD
Factor 1: Management and Organization when Dealing with Students		2.07	1.05
Factor 2: Teaching Strategy	70	1.92	0.94
Factor 3: Rights of Teacher		2.30	1.01
Factor 4: Well-being of a Teacher		1.97	0.89

Descriptive Summary of Identified Factors

The table presents the descriptive summary for the mean scores of the participants (N=70) based on the factors created. According to the table, factor 3 (mean=2.30, sd=1.01) was shown to have the largest mean and a measure of spread that is 1.01 standard deviation close to the mean score. This was followed by factor 1 (mean= 2.07, sd=1.05), factor 4 (mean=1.97, sd=0.89) and factor 2 (mean = 1.92, sd = 0.94); all of which displayed measures of spread that are similar.

Conclusion

According to the results, factor 3 (Rights of Teacher) was shown to have the largest mean and a measure of spread that is close to the mean score, which implicates that it is has the highest level of needs the respondents must overcome during their beginning years as instructors. This was followed by factor 1 (Management and Organization when Dealing with Students), factor 4 (Well-being of a Teacher) and factor 2 (Teaching Strategy); all of which displayed measures of spread that are similar.

Recommendations

Putting great weight on the outcome of the study, it is aptly recommended that beginning instructors shall undergo necessary induction program and follow the suggested manual as proposed by the researcher of this study to enhance level of awareness and understanding of an instructor's rights when it comes to teaching towards realization of the college's aims and objectives.

References

1. Amar, M.B. (1952). *An analysis and appraisal of induction programs for elementary school teachers with reference to development of a program for Chicago*. Doctoral Thesis, Loyola University, 1952.
2. Althanases, S.Z., & Achinstein, B. (2003). *Focusing new teachers on individual and low performing students: The centrality of formative assessment in the mentor's repertoire of practice*. *Teachers Collage Record*, 105 (8), 1486-1520.
3. Bilbao, P.etal. (2013). *Evaluation of the Teacher Induction Program as Professional Development of Newly- hired Teachers in the Department of Education (Teacher Education Council Research)*
4. Calver, C.L., & Katz, D.S. (2004). *Teaching at the boundary of acceptable practice: What is a new teacher mentor to do?* *Journal of Teacher Education*. 55 (5), 449-462.
5. Chao, G.T., O'Leary Kelly, A. M., Wolf, S., & Klein, H.J. (1994). *Organizational socialization: Its content and consequences*. *Journal of Applied Psychology*, 79,730-743.
6. Cole, A. L. (1994). *Problems and paradoxes in beginning teacher support; Issues concerning school administrators*. *The Alberta Journal of Educational Research*, XL (3), 297 – 318.
7. Corcoran, E. (1981). *Transition shock: The beginning teacher's paradox*. *Journal of Teacher Education*, 32(3), 19-23.
8. Glazerman, S., Dolfin, S., Bleeker, M., Johnson, A., Isenberg, E., Julieta, I., et al. (2008). *Impactsof comprehensive teacher induction: Results from the first year of a randomized controlled study (NCEE 2009-4034)*. Washington, DC: national Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
9. Klein, H.J., & Weaver, N.A. (2000). *The effectiveness of an organizational-level orientation training program in the socialization of new hires*. *Personnel Psychology*, 53 (1), 47-66.
10. Luft, J.A., & Cox, W.E. (2001). *Investing in our future: A survey of support offered to beginning secondary science and mathematics teachers*. *Science Educator*, 10 (1), 1-9.
11. Napper-Owen, G. E., & Philips, D.A. (1995). *A qualitative analysis of the impact of induction assistance on first-year physical educators*. *Journal of Teaching in Physical Education*, 14 (3). 305-327.
12. Nicodemus, J.C. (2011). *Induction program, performance and morale of teachers in selected schools in DepEd, Cavite City (Masteral thesis)*. College of Industrial Education, Technological University of the Philippines
13. Partlow, M. R. (2006). *Teachers' perceived needs within a responsive induction program structured as 161 a learning community (Doctoral dissertation)*. Retrieved from OhioLINK ETD Center. (Document No. osu1154972019)
14. Republic Act No. 7784. *An act strengthening teacher education in the Philippines by establishing centers of excellence, creating a teacher education council for the purpose and appropriating funds therefore and for other purposes*. Congress of the Philippines
15. Republic Act No. 10533. *An act enhancing the Philippine Education System by strengthening its curriculum and increasing the number of years for basic education, appropriating funds therefore and for other purposes*. Congress of the Philippines
16. Rosenholtz, S. J. (1989). *Workplace conditions that affect teacher quality and commitment: Implications for teacher induction programs*. *The Elementary School Journal*, 89, 421-438.
17. Smith, T.M., & Ingersoll, R.M., (2004). *Factors affecting teachers' decisions to leave the profession*. Liverpool: University of Liverpool.
18. Strong, M.m& Baron, W. (2004). *An analysis of mentoring conversation with beginning teachers: Suggestions and responses*. *Teaching and Teacher Education*, 20 (1), 47-57.
19. Van Maanen, J., & Schein, E. H. (1979). *Toward a theory of organizational socialization*. *Research in Organizational Behavior*, 1, 209
20. Veenman, S. (1984). *Perceived problems of beginning teachers*. *Review of Educational Research*, 19 (3), 143-178.