

Individual Innovativeness of Pre-service Elementary Grade Teachers

Romiro G. Bautista*, Cynthia Grace T. Valdez, Eleanor G. Garingan, Jamina G. Camayang,
Dennis Norfel P. Horlador, Jefferson N. Manait, Elfie S. Reyes

College of Teacher Education, Quirino State University, Philippines

*Corresponding author: romiro.bautista@qsu.edu.ph

Abstract Individual innovativeness, as applied among teachers who are agents of change and innovations, centers the idea of being adaptive and adoptive to radical changes through risk-taking. Innovativeness is the teachers' tendency to adapt and adopt innovations earlier than other members of their niche, in particular, and the society, in general. This study is designed to determine the individual innovativeness of pre-service elementary grade teachers as a basis in proposing an intervention program to boost their morale of being an innovative professional teacher. Using 42 senior pre-service elementary grade teachers of the SY 2017-2018 under Descriptive-Comparative Research Design, the following are known: (1) The respondents were *late majority innovative* with a general index of 55.70, interpreted as *lowly innovative (late majority)*; (2) Males had higher index than their female counterparts although the mean difference of .50 is almost negligible – both males and females fall in the index range for *late majority innovative*; (3) The age group of 21-22 had the highest index than their 23 and above and 19-20 age group-counterparts although the mean differences of .08 and 1.50, respectively, are almost negligible – all age groups fall in the index range for *late majority innovative*; and (4) The *Ilocanos* had the highest index when compared to their *Ifugao/Igorot* and other ethno-linguistic group-counterparts although the mean differences of 1.63 and 1.38, respectively, are almost negligible – all ethnicity groups fall in the index range for *late majority innovative*.

Keywords: *innovativeness, adaptation, pre-service elementary grade teachers*

Cite This Article: Romiro G. Bautista, Cynthia Grace T. Valdez, Eleanor G. Garingan, Jamina G. Camayang, Dennis Norfel P. Horlador, Jefferson N. Manait, and Elfie S. Reyes, "Individual Innovativeness of Pre-service Elementary Grade Teachers." *American Journal of Educational Research*, vol. 6, no. 6 (2018): 617-620. doi: 10.12691/education-6-6-6.

1. Introduction

The advent of educational technologies and advanced educational paradigms has directed educationists to come across learning and to reinvent their innovativeness by adopting new information, practices, and standards within their niche and social systems [1,2]. Innovation, in this sense, is underscored as the idea, practice, or object that is perceived as new by an individual or other unit through adoption and adaptation [3]. As a result, individuals as rational beings employ mechanisms in adopting and adapting various changes in their social systems. This includes their adaptations to various changes that may affect their efficacy as agents of innovations [4,5,6,7].

Individual innovativeness centers the idea of being adoptive and adaptive to changes through risk-taking which is not common to everybody. Hence, innovativeness is described as the tendency to adopt and adapt innovation earlier than other members of their niche and the society where they live in. As applied in the dynamic teaching profession, teachers need to update themselves in the realms of individual innovativeness – the climate that puts every teacher to become receptive towards change

particularly to their educational standpoints and practices [8,9,10,11].

According to Bandura's Social Learning Theory, the behavior of individuals in the midst of this radical change is intertwined with their cognitive processes. One of the main tenets of this theory is that individuals hold stronghold beliefs to their capabilities to organize and execute courses of actions relative to managing prospective radical situations [12,13,14]. Hence, personal beliefs of individuals rationalize their mental acumen in demonstrating their capacity to adopt and adapt new policies that might affect the veracity of their work and works under the perspectives and emphases on the diffusion of innovation [7]. This in turn based on peoples' behavior being strongly related to their attitudes towards a certain course of action and decision. People form attitudes by systematically deliberating on any information that they have about the behavior being considered. In turn, attitude may result from an individuals' beliefs about the consequences of a particular behavior and their evaluation of those beliefs [15].

Moreover, self-efficacy as postulated in Self-Efficacy Theory covers the individual's personal beliefs and capacity to manage instructional activities such as planning, organizing, and achieving goals to a desired

level [12,16,17]. Self-efficacy, as may be attributed in the teaching profession, is the personal-internal motive that accounts every professional's commitment to instructional capabilities that are autonomy-supportive and positive for student-engagement and achievement outcomes amidst the newness of the idea that may come across their routine as professionals [8,17,18]. This attribution may exude every individual to enthusiastically and willingly adopt and adapt changes and innovations. Hence, innovativeness impinges a potential role in shaping the mindset of every individual to a greater sense of commitment and enthusiasm in the teaching profession [9,14].

Aptly, innovation which is intertwined with the inevitable change should demonstrate positive attitude towards technological advancement. Teachers must enthusiastically deal change as a learning avenue that will craft their classroom efficacy on infusing innovations among their students [2,5,6,7]. Hence, this study deals on the determinant and comparison of the individual innovativeness of pre-service elementary grade teachers.

2. Methodology

The Descriptive-Comparative Research Design was used in this study as it tried to gather information on the occurrences of the individual innovativeness during the time of the study. The Comparative Research design was used to delineate significant differences between and among grouping variables to further analyse this phenomenon among the respondents.

This was conducted at the College of Teacher Education of Quirino State University, Diffun, Quirino during the second semester, SY 2017-2018. The respondents of this study were the 42 senior pre-service elementary teachers during the second semester, SY 2017 - 2018.

The instrument used in this study was adopted from Hurt, Joseph, and Cook [18]; albeit old, indicators still holds to be true as perceived by the proponents in assessing individuals' orientations towards change. The instrument had been found to be highly reliable and the predictive validity is good: an alpha of .89. In the current study, the alpha is .82.

Data were gathered through questionnaire and interview. Prior to the gathering of the needed data, the researchers sought the approval of the Program Chairperson of the Bachelor in Elementary Education to float the questionnaire among the respondents. The researchers gathered them in a room where they were briefed regarding the study. After which, they answered the questionnaire at the same time. Answering the questionnaire was made voluntary. Data were coded and tallied in Microsoft Excel for further analysis. The gathered data were processed using frequency, mean, percentage, t-test, and ANOVA.

3. Results and Discussion

Table 1 presents the general innovation index of the pre-service elementary grade teachers. It shows that most of the respondents are *late majority innovative*. The foregoing results deviate from the postulated distribution

of innovativeness by Rogers [19,20]. It can be gleaned that the frequency distribution of the pre-service teachers' individual innovativeness scores were early majority (41.90%) and late majority (58.10%). When compared to Roger's model, the respondents were found to be less innovative as indicated by the increased proportion of the ideal percentage in a group aside from the fact that nobody considered himself as innovator nor early adopters.

Table 1. General Innovation Index of Pre-service Elementary Grade Teachers

Innovation Category	Frequency	Percent
Early Majority	18	41.90
Late Majority	25	58.10
Total	43	100
Mean = 55.70		
Interpretation = Lowly Innovative (Late Majority)		

Furthermore, the general index of 55.70, interpreted as *lowly innovative (late majority)*, posts a weakling characteristic of a 21st century teacher. This means that the respondents lack some competencies which weakens their morale and confidence as teachers. Hence, this posts for a remediation from the College of Teacher Education in order to boost the morale and confidence of these future elementary grade teachers thereby transforming them to become innovative. It was claimed that an innovative teacher who models innovations in class produces more innovative learners. Learners learn to imbibe the virtue of being innovative from their models when they are exposed to favorable learning conditions [2,5,10].

Table 2. Innovation Index of Pre-service Elementary Grade Teachers when grouped by Sex

	Male		Female	
	Index	Interpretation	Index	Interpretation
Individual Innovation Index	56.10	Late Majority	55.60	Late Majority

Table 2 presents the innovation index of the pre-service elementary grade teachers when grouped by sex. It shows that males have higher index than their female counterparts although the mean difference of .50 is almost negligible. Furthermore, both males and females fall in the index range for *late majority innovative*.

The foregoing results imply that the respondents are *lowly innovative* and may soon affect their performance when they become professionals if this will not be mitigated through an intervention program.

Table 2.1. t-test on the Innovation Index of Pre-service Elementary Grade Teachers when grouped by Sex

	t-value	p-value	Decision
Individual Innovation Index	.525	.603	Accept Ho

t-test results on the innovation index of the pre-service elementary grade teachers shows that there is a comparable state of innovativeness between male and female. This means that sex has nothing to do with their innovativeness. These results led to the acceptance of null hypothesis which states that there is no significant

difference on the innovation index of the respondents when grouped by sex.

Table 3. Innovation Index of Pre-service Elementary Grade Teachers when grouped by Age

	19 – 20		21 – 22		23 and above	
	Index	Inter	Index	Inter	Index	Inter
Individual Innovation Index	55.08	Late Majority	56.58	Late Majority	56.50	Late Majority

Table 3 presents the innovation index of the pre-service elementary grade teachers when grouped by age. It shows that the age group of 21-22 has the highest index than their 23 and above and 19-20 age group-counterparts although the mean difference of .08 and 1.50, respectively, are almost negligible. Furthermore, all age groups fall in the index range for *late majority innovative*.

The foregoing results imply that the respondents are *lowly innovative* and may soon affect their performance when they become professionals if this will not be mitigated through an intervention program.

Table 3.1. ANOVA on the Innovation Index of Pre-service Elementary Grade Teachers when grouped by Age

	F-value	p-value	Decision
Individual Innovation Index	1.853	.170	Accept Ho

F-test (ANOVA) results on the innovation index of the pre-service elementary grade teachers shows that there is a comparable state of innovativeness among their age groups. This means that age has nothing to do with their innovativeness. These results led to the acceptance of null hypothesis which states that there is no significant difference on the innovation index of the respondents when grouped by age.

Table 4. Innovation Index of Pre-service Elementary Grade Teachers when grouped by Ethno-linguistic Group

	<i>Ifugao/Igorot</i>		<i>Ilocano</i>		Others	
	Index	Inter	Index	Inter	Index	Inter
Individual Innovation Index	54.75	Late Majority	56.38	Late Majority	55.00	Late Majority

Table 4 presents the innovation index of the pre-service elementary grade teachers when grouped by ethno-linguistic group. It shows that the *Ilocanos* have the highest index than their *Ifugao/Igorot* and other ethno-linguistic group-counterparts although the mean difference of 1.63 and 1.38, respectively, are almost negligible. Furthermore, all ethno-linguistic groups fall in the index range for *late majority innovative*.

The foregoing results imply that the respondents are *lowly innovative* and may soon affect their performance when they become professionals if this will not be mitigated through an intervention program.

Table 4.1. ANOVA on the Innovation Index of Pre-service Elementary Grade Teachers when grouped by Ethno-linguistic Groups

	F-value	p-value	Decision
Individual Innovation Index	2.066	.140	Accept Ho

F-test (ANOVA) results on the innovation index of the pre-service elementary grade teachers shows that there is a comparable state of innovativeness among their ethno-linguistic groups. This means that ethno-linguistic group has nothing to do with their innovativeness. These results led to the acceptance of null hypothesis which states that there is no significant difference on the innovation index of the respondents when grouped by ethno-linguistic group.

The foregoing results deviate from what is postulated by some theorists and found in a number of studies. The non-concordance of the respondents to the ideal model of innovativeness in the social community is something that needs to be addressed especially that the respondents are future teachers who will be agents of innovativeness.

Let it be noted that teachers who infuse innovations in their classes are most likely to produce innovative learners [8,9,10,11,19]. Hence, there is a need to recalibrate teachers on their technological-manipulative skills in order for them to exude innovation in their classes when they are already in the field as professional teachers [1,2,21,22].

Alongside with this, teachers in the College of Teacher Education need to exude innovativeness as they are seen as model by these pre-service teachers. An introspection among them is highly wanting if they are to produce innovative future professional teachers.

Owing to the aforementioned results, it may be claimed that teaching, as a dynamic profession where radical changes are inevitable, requires its prospective teachers to be receptive of change. They must own a greater sense of commitment and enthusiasm to adapt and adopt changes for them to model and profess innovations among their student-learners because students embrace innovations as they observe and practice it from their teachers [2,4,5,8,9,10,14,16,21].

The results of this study impinges the need to rationalize every learning encounters of the pre-service elementary grade teachers in managing change through capacity building programs like seminar-workshops, personalized counselling program, among others, as a way of enriching their technical and professional know-how as teachers. Manipulative skills, which is a characteristic of a 21st century teacher, should be modelled and practiced by them in the university as they will soon showcase it among their students.

4. Conclusion

Based on the foregoing results, the following are drawn:

1. The pre-service elementary grade teacher-respondents are late majority innovative;
2. Male pre-service elementary grade teacher-respondents are more innovative than their female counterparts;
3. Innovativeness of the pre-service elementary grade teacher-respondents does not impinge on their age; and
4. *Ilocanos* are the most innovative among other ethno-linguistic groups in the study.

References

- [1] Anderson, J. (2010). ICT Transforming Education: A Regional Guide. Bangkok: UNESCO.

- [2] Anderson, T., Varnhagen, S., & Campbell, K. (1998). Faculty adoption of teaching and learning technologies: Contrasting earlier adopters and mainstream faculty. *The Canadian Journal of Higher Education*, 28(23), 71-78.
- [3] Rogers, E.M. (2004). A prospective and retrospective look at the diffusion model. *Journal of Health Communication*, 9, 13-19.
- [4] Yuksel, I. (2015). Roger's Diffusion of Innovation Model in Action: Individual Innovativeness Profiles of Pre-service Teachers in Turkey. *Croatian Journal of Education*, 17 (2), 507-534.
- [5] Davis, H., Hartshorne, R., & Ring, G. (2010). Being an innovative teacher: Pre-service teachers' conceptions of technology and innovation. *International Journal of Education*, 2(1), 1-28.
- [6] Oliver, B. & Goerke, V. (2008). Undergraduate students' adoption of handheld devices and Web 2.0 applications to supplement formal learning experiences: Case studies of Australia, Ethiopia and Malaysia. *International Journal of Education and Development Using ICT*, 4(3), 78-94.
- [7] Nutley, S., Davies, H., & Walter, I. (2002). Conceptual synthesis 1: learning from the diffusion of innovation. <http://www.st-andrews.ac.uk/~cppm/Learning%20from%20the%20Diffusion%20of%20innovations.pdf>.
- [8] Celik, K. (2013). The relationship between individual innovativeness and self-efficacy level of student teachers. *International Journal of Scientific Research in Education*, 6 (1), 56-67.
- [9] Cocklar, A. (2012). Individual Innovativeness Levels of Educational Administrators. *Digital Education Review*: <http://greav.ub.edu/der>.
- [10] Soffer, T., Nachmias, R., & Ram, J. (2010). Diffusion of web supported instruction in higher education - The Case of Tel-Aviv University. *Educational Technology & Society*, 13(3), 212-223.
- [11] Ali, A. (2003). Faculty adoption of technology: Training comes first. *Educational Technology*, 43, 51-53.
- [12] Ali, I. (2018). Personality traits, individual innovativeness, and satisfaction with life. *Journal of Innovation and Knowledge*.
- [13] Su Eroz, S. (2017). The relationship between individual innovativeness and locus of control: a research on tourism faculty and students. *Journal of Tourism and Hospitality Management*, 5 (1), 46-52.
- [14] Hammond, M.M., Neff, N.L., Farr, J.L., Schwall, A.R., & Zhao, X. (2011). Predictors of individual-level innovation at work: a meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, 5(1), 90-105.
- [15] Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- [16] Yates, B. (2001). Applying diffusion theory: adoption of media literacy programs in schools. Conference Paper: International Communication Association Conference.
- [17] Kilicer, K. & Odabasi, H. (2010). Individual innovativeness scale: the study of adaptation to Turkish validity and reliability. *Hacettepe University Journal of Education*, 38, 150-164.
- [18] Hurt, H. T., Joseph, K., & Cook, C. D. (1977). Scales for the measurement of innovativeness. *Human Communication Research*, 4, 58-65.
- [19] Rogers, E.M. (1995). *Diffusion of Innovations*. New York: Free Press.
- [20] Rogers, E.M. (2003). *Diffusion of Innovation* (5th ed.). New York: Free Press.
- [21] Parminter, T. & Wilson, J. (2003). Systematic intervention in biodiversity management based upon the theory of reasoned action. Proceedings of the 1st Australian Farming Systems Association Conference.
- [22] Prochaska, J., DiClemente, C., & Norcross J. (1992). In search of how people change: applications to addictive behaviors. *American Psychologist*, 47 (9), 1102-1112.