Scholar Publishing Group
International Journal of Sports Technology
https://doi.org/10.38007/IJST.2024.050101
ISSN 2789-7141 Vol. 5, Issue 1: 1-11

Research Engagement and Productivity of Physical Education Teachers: Basis for Quality Research Management in Universities

Yongsheng Liao[1, a], Mark Christian Siwa[1, b*]

[1]*Adamson University, Manila, Philippines*

[a]*67895718@qq.com,* [b]*mark.christian.siwa@adamson.edu.ph*

[*]*corresponding author*

Keywords: Research Engagement and Productivity, Quality Research Management, Descriptive Correlational, Research Productivity

Abstract: This descriptive correlational study focused on the research engagement and productivity of the physical education teachers in selected universities in China. Physical Education teacher-respondents are productive in research as institutional requirement, performance evaluation, and professional title evaluation which are often important to research engagement. Therefore, they engage in research because it is a university requirement for their performance evaluation so they can obtain the highest professional title. Physical Education teacher-respondents are less productive in research completion since it would be possible only at a specified duration. They are productive in research publication and utilization which are often important to research productivity. However, they neither consider important the publication in high-quality Chinese journals in physical education and based on international standards nor international peer-review processes in physical education. All the variables in research engagement such as institutional requirements, performance evaluation and professional title evaluation are positively correlated to all the variables in research productivity such as research completion, research publication, research presentation and research utilization. It indicates that the Physical Education teacher-respondents who considered more the factors in research engagement such as institutional requirements, performance evaluation and professional title evaluation also considered more research productivity in terms of research completion, research publication, research presentation and research utilization. It also indicates that the research productivity of the Physical Education teacher-respondents had something to do with the factors in research engagement.

1. The Problem and Its Setting

In 2018, a document issued by the joint force of three ministries and two national central institutions specifically proposed moving away from the "Four only" phenomenon of "only papers, only titles, only diplomas and only awards" .The Ministry of Science and Technology and the Ministry of Education in China recently published two policy documents. However, the new policy implies that the universities themselves should be responsible for developing evaluation protocols in research with specification criteria and procedures. Research productivity is determined by the number and quality of research publications. It is one of major professional developments of teachers in higher education. Guberman and Mcdossi and Van Der Klink regard research as a main path for teachers' career and an important tool for teachers' professional development.[1-2] Gong, MacPhail, and Young, recognize that generally, teachers appreciate the significance of teacher education research. [3]This study will look into quality research management for the research productivity of physical education teachers in selected universities in China. This study regards the importance of quality research management to document the research outputs that qualified to publication, presentation, and utilization in reputable educational research institutions and higher education institutions.

1.1 Statement of the Problem

This study intends to determine the research engagement and productivity of the physical education teachers in selected universities in China.

1. What is the profile of the PE teacher respondents in terms of the following:

1.1 sex

1.2 highest educational attainment

1.3 years of teaching

1.3 teaching position

1.4 tenure of employment

2. What are thelevel of importance of the factors considered by the PE teacher respondents in engaging in research?

2.1 institution requirements

2.2 performance evaluation

2.3 professional title evaluation

3. What is the level of research productivity of the PE teacher respondents in terms of the following:

3.1 research completion

3.2 research publication

3.3 research presentation

3.4 research utilization

4. Is there a significant relationship between the importance of the identified factors in engaging in research and the profile variables taken as test factors?

5. Is there a significant relationship between research productivity of the PE teacher respondents and the profile variables taken as test factors?

6. Is there a significant relationship between research engagement and research productivity of the PE teacher respondents?

1.2 Scope and Delimitation of the Study

This descriptive correlational study focused on the research engagement and productivity of the

physical education teachers in selected universities in China.

This study used the purposive sample to include PE teachers with master's degree and with doctorate degrees who are teaching in universities. This study included the profile variables of the PE teacher respondents in terms of sex, highest educational attainment, years of teaching, teaching position, and tenure of employment which were used as test factors [4-5].

This study determined the factors considered by the PE teacher respondents in research engagement in terms of institution requirements, performance evaluation, and professional title evaluation; and the level of research productivity of the PE teacher respondents in terms of research completion, research publication, research presentation, and research utilization.

This study determined the significant relationship between the identified factors to research engagement and the profile variables; between research productivity of the PE teacher respondents and the profile variables; and between research engagement and research productivity of the PE teacher respondents.

2. Theoretical Framework

This study is strongly established from Vroom's Theory of Work and Motivation, introduced in 1960 (in Susan, 2013), started with the idea that people tend to prefer certain goals or outcomes over others (Miner, 2007 in Soupi-Fremstad, 2013). This study will use the three variables of the Expectancy Theory namely effort/expectancy; instrumentality/performance; valence/reward. Teachers, such as physical education teachers, anticipate experiencing feelings of satisfaction if the preferred outcome, or goal, is achieved. However, this study will not determine satisfaction, instead reward as provided by an educational and/or research institution for the PE teacher's research productivity [6-7].

Vroom designed the Expectancy Theory based on motivation and management in the workplace. However, this study will consider expectations or factors for the PE teachers' research engagement, instead of motivation; then management refers to quality research management as output of this study but depending on the findings. The theory suggests that employees' perceived views of workplace outcomes determine the level of motivation they have when working (Redmond and Hite, 2013 in Soupi-Fremstad, 2013). If the organization requires an employee to demonstrate a high-level work product, the employee expects the outcome to be high as well. If that expectation is met, the employee may be motivated to continue producing a high-level product; or vice versa. Likewise in this study, research productivity entails completion, publication, presentation, and utilization which may reward PE teachers of highest educational degree, professional title of professor, or international recognition especially for publication on high impact refereed journals as the most valued research activity in universities in China [8-9].

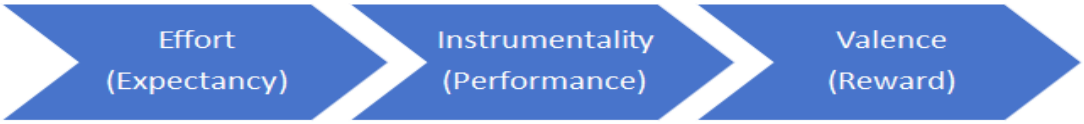

Figure 1. E x I x V (Vroom, 1964 in Soupi-Fremstad, 2013) Expectancy X Instrumentality X Valence = (Effort) x (Performance) x (Rewards)

Is shown in Figure 1, If a person is motivated to the degree that his/her effort will lead to an acceptable performance (expectancy), the performance will be rewarded (instrumentality), and that the value of the reward is highly positive (valence), then the level of effort will likely be equal to the

level of performance and, in turn, that level of performance will be equal to the perceived level of rewards (Lunenburg, 2011 in Soupi-Fremstad, 2013)

In this study, if a PE teacher is expected and required by his institute or university to engage in research, then he will engage more in research and result in his research productivity especially to publish it in refereed journals as most valued in a university; to obtain the highest educational degree, professional title – professor, or international recognition, then he will increase his research engagement and productivity; thus, his level of performance in research will be equal to the perceived level of rewards in research in China universities [10-11].

Conceptual Paradigm

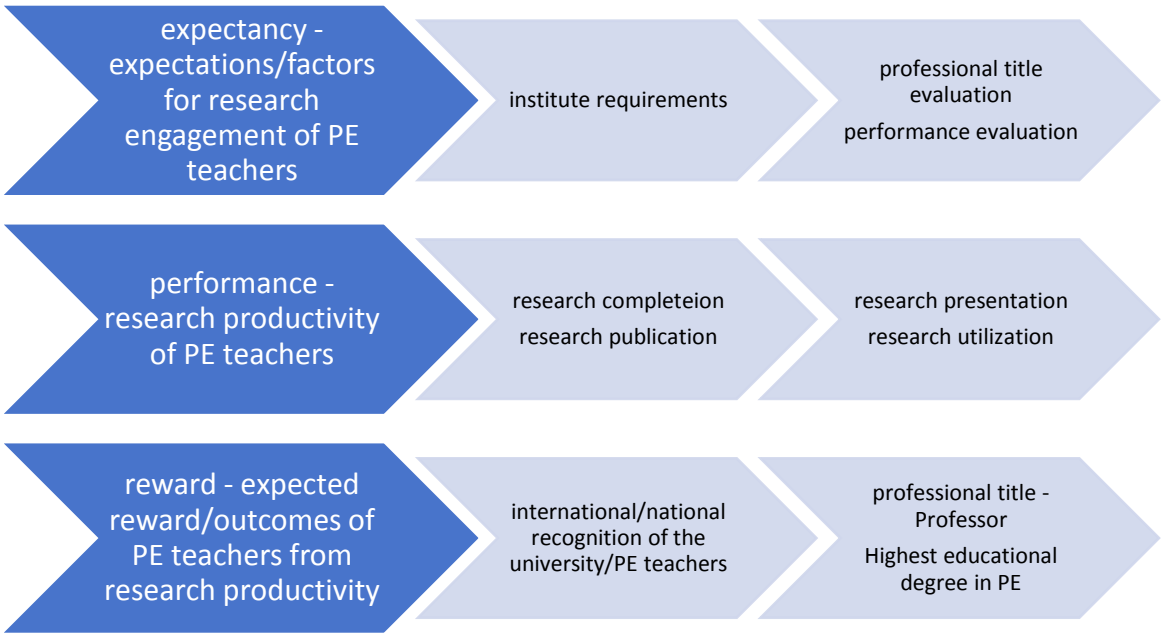

Figure 2. Expectancy on the Research Productivity of Physical Education Teachers as Criterion to Their Performance Evaluation

Is shown in Figure 2, the expectancy on the research productivity of physical education teachers as criterion to their performance evaluation.

This study refers to expectancy or effort as expectations or factors to the PE teachers' research engagement, which include institute requirements, performance evaluation, and professional title.

Performance or instrumentality refers to research productivity which entails completion, publication, presentation, and utilization which may reward the PE teachers. The reward or valence are the expected rewards or outcomes of PE teachers for their research productivity which include international recognition especially for publication on high impact refereed journals as the most valued research activity in universities in China, highest educational degree in PE, and professional title of professor [12].

The paradigm does not illustrate yet the output of this study; but hopes to present a basis for quality research management for universities which may depend on the findings of this study. With quality research, this study refers to the research productivity of PE teachers that gives value on publication, presentation, and utilization not only in international research institutions; instead give high regard for the new priority to local relevance, and as stipulated in the new policy in China, the new publications in high-quality Chinese journals will be encouraged, and the development of such journals will be supported.

Thus, this management will look more into the quality of research of PE teachers according to its value and

merit for local relevance and utilization in pedagogy, practice, performance in Physical Education as a discipline for the academic and research institutions, and local communities in China. This management hopes to take a paradigm shift from the traditional recognition of research productivity in China based on international indexing in high impact journals in the western countries as criterion to performance evaluation of PE teachers in research; instead to the qualitative but empirical and actual evidences of these research.

3. Research Methodology

This chapter discusses the research method to be used in gathering, analyzing and interpreting data. It also includes the research design, research locale, population and sampling, data gathering procedure and statistical treatment of data to be gathered to accomplish the study.

3.1. Research Design

This study employed the descriptive correlational method which involved PE teachers with master's degree and with doctorate degrees who are teaching in universities. This study included the profile variables of the PE teacher respondents in terms of sex, highest educational attainment, years of teaching, teaching position, and tenure of employment which were used as test factors.

This study determined the factors considered by the PE teacher respondents in research engagement in terms of institution requirements, performance evaluation, and professional title evaluation; and the level of research productivity of the PE teacher respondents in terms of research completion, research publication, research presentation, and research utilization.

This study determined the significant relationship between the identified factors to research engagement and the profile variables; between research productivity of the PE teacher respondents and the profile variables; and between research engagement and research productivity of the PE teacher respondents.

3.2. Research Locale

This study was conducted in the three selected universities in Hunan, China. These universities are engaged in research based on the profile variables of the faculty.

University 1 – Hunan University of Arts and Sciences
University 2 – Hunan University of Science and Technology
University 3 – Jishou University

3.3. Population and Sampling

This study included 3 universities in Hunan only that gave their consent to participate in the study. This study used the purposive sampling which involved Chinese university teachers for the quantitative phase based on the following general criteria: Physical education teacher, engage in research, 25 – 60 years old ,Masters or doctorate degree holders; Instructor to Full Professor, Regular full – time faculty, teaching in the selected universities in Hunan for 1 – 30 years.

The sample size of (n = 205) was based on the number of qualified PE teachers engaged in research in their university and consent to participate in the survey.

There were two groups of respondents engaged in research: Group 1 – PE teachers with master's degree; and Group 2 – PE teachers with doctorate degree.

3.4. Research Instruments

The survey questionnaire was drawn from a carefully selected literature on research productivity of PE teachers from universities in China. The questionnaire determined profile variables; factors to research engagement – institute requirements, performance evaluation, and professional title evaluation; and research productivity – completion, publication, presentation, and utilization.

3.5. Data Analysis

Microsoft Excel and Statistical Package for Social Sciences were used in treating the gathered data in this study. Frequency count and percentage were used to describe the profile of the Physical Education teacher-respondents.

Weighted mean was used to describe the factors considered by the Physical Education in research engagement and the following Likert Scale is shown in Table 1:

Table 1. The factors considered by the Physical Education in research engagement

Mean Range	Verbal Description	Verbal Interpretation
3.25 – 4.00	Strongly Agree	The factor is always considered important by the teacher-respondent in research engagement.
2.50 – 3.24	Agree	The factor is oftentimes considered important by the teacher-respondent in research engagement.
1.75 – 2.49	Slightly Agree	The factor is sometimes considered important by the teacher-respondent in research engagement.
1.00 – 1.74	Disagree	The factor is not considered important by the teacher-respondent in research engagement.

Weighted mean was also used to describe the research productivity of Physical Education teacher-respondents and the following Likert Scale is shown in Table 2:

Table 2. The research productivity of Physical Education teacher-respondents

Mean Range	Verbal Description	Verbal Interpretation
3.25 – 4.00	Strongly Agree	The Physical Education teacher-respondent is very productive in research.
2.50 – 3.24	Agree	The Physical Education teacher-respondent is productive in research.
1.75 – 2.49	Slightly Agree	The Physical Education teacher-respondent is less productive in research.
1.00 – 1.74	Disagree	The Physical Education teacher-respondent is not productive in research.

Lastly, Spearman rho was used to determine if there is a significant relationship between the profile of the Physical Education teacher-respondents and the factors they considered in research engagement as well as their research productivity. Spearman rho was also used to determine if there is a significant relationship between the factors considered by the Physical Education teacher-respondents and their research productivity.

4. Summary, Conclusions And Recommendations

This chapter presents the summary of the research engagement and productivity of the physical education teacher - respondents. It also presents the conclusion based on the significant findings of the study and the recommendations on quality research management in universities.

4.1. Summary of Findings

4.1.1. Profile of the Respondents

The distribution of the Physical Education teacher-respondents according to sex includes75.1% are male; while 24.9% are female.

In terms of highest educational level, 65.9 % of the physical education teacher – respondents have master's degree; while 34.1% have doctorate degree.

In terms of years of teaching, 22% have served for 11 – 15 years, while quite a few have served for 26 – 30 years which is 9.8% only. Notably, those who have served from 1 – 5 years and 6 – 10 years obtained 17.1%, respectively; while those who have served for 16 – 20 years and 21- 25 years obtained 16.6% and 17.6%, respectively.

In terms of teaching position, 37.1% are guest lecturers; 30.2% are associate professors; 22.9% are instructors; and only 8.3% are full professors.

In terms of tenure of employment, 95.1% are permanent faculty; while only 4.9% are probationary.

4.1.2. Factors Considered by PE Teacher - respondents in Research Engagement

Overall, the Physical Education teacher-respondents assessed their research engagement in terms of institutional requirements with an average weighted mean of 3.17 verbally described as productive.

Overall, the Physical Education teacher-respondents assessed their research engagement in terms of performance evaluation with an average weighted mean of 2.84 verbally described as productive.

Overall, the Physical Education teacher-respondents assessed their research engagement in terms of professional title evaluation with an average weighted mean of 2.98 verbally described as productive.

4.1.3. Research Productivity of the PE Teacher - respondents

Overall, the Physical Education teacher-respondents assessed their research productivity in terms of research completion with an average weighted mean of 2.35 verbally described as less productive.

Overall, the Physical Education teacher-respondents assessed their research productivity in terms of research publication with an average weighted mean of 2.79 verbally described as productive.

Overall, the Physical Education teacher-respondents assessed their research productivity in terms of research presentation with an average weighted mean of 1.64 verbally described as not productive.

Overall, the Physical Education teacher-respondents assessed their research productivity in terms of research utilization with an average weighted mean of 1.64 verbally described as productive.

4.1.4. Significant Relationship between the Factors to Research Engagement and the Profile Variables

Overall, almost all of the profile variables were significantly correlated to the factors in research engagement. Thus, the null hypothesis "There is no significant relationship between the profile of Physical Education teacher-respondents and the factors they considered in research engagement" was rejected.

4.1.5. Significant Relationship between Research Productivity and the Profile Variables

Overall, almost all of the profile variables were significantly correlated to all variables in research productivity. Thus, the null hypothesis "There is no significant relationship between the profile of Physical Education teacher-respondents and their research productivity" was rejected.

4.1.6. Significant Relationship between Research Engagement and Research Productivity

The null hypothesis "There is no significant relationship between the factors considered by the Physical Education teacher-respondents in research engagement and their research productivity" was rejected.

4.2. Conclusions

This study draws the following conclusions:

4.2.1. Profile of the Respondents

Majority of the Physical Education teacher-respondents are male. They have stayed in teaching from 1- 5 years minimum up to 26 – 30 years maximum. Generally, PE teachers have obtained their master's degree to be able to teach in the university and are required to engage and produce research. Notably, very few are full professors who have obtained doctorate degree and have engaged and published research as per university requirement. Majority of them are permanent faculty, thus required to engage and produce research asper university requirement.

4.2.2. Factors Considered by PE Teacher - respondents in Research Engagement

Physical Education teacher-respondents are productive in research since it an institutional requirement, performance evaluation, and professional title evaluation which are often important to research engagement. Therefore, they engage in research because it is a university requirement for their performance evaluation so they can obtain the highest professional title.

4.2.3. Research Productivity of the PE Teacher – respondents

Physical Education teacher-respondents are less productive in research completion since it would be possible only at a specified duration.

They are productive in research publication and utilization which are often important to research productivity. However, they neither consider important the publication in high-quality Chinese journals in physical education and based on international standards nor international peer-review processes in physical education.

Among the four factors, they are not productive in research presentation since they do not consider

it important to research productivity. They do not consider presenting and sharing their research findings in academic conferences despite conference organizations and associations in China and abroad strongly promote research and poster presentations.

4.2.4. Significant Relationship between Research Engagement and the Profile Variables

Highest educational attainment, teaching position and tenure of employment are all positively correlated to institutional requirements, performance evaluation and to professional title evaluation. The Physical Education teacher-respondents with higher educational attainment, with higher teaching position and with permanent status considered more the institutional requirements, performance evaluation and professional title evaluation in research engagement.

Further, years of teaching is positively correlated to institutional requirements and performance evaluation. Physical Education teacher-respondents who have longer years of teaching considered more the institutional requirements and performance evaluation in research engagement.

It indicates that the research engagement of the Physical Education teacher-respondents had something to do with their profile.

4.2.5. Significant Relationship between Research Productivity and the Profile Variables

Highest educational attainment, teaching position and tenure of employment are all positively correlated to research completion, research publication, research presentation and research utilization. the Physical Education teacher-respondents with higher educational attainment, with higher teaching position and with permanent status considered more to have research completion, research publication, research presentation and research utilization.

Further, years of teaching is positively correlated to research publication. the Physical Education teacher-respondents who have longer years of teaching considered more research publication in research productivity.

It indicates that the research productivity of the Physical Education teacher-respondents had something to do with their profile.

4.2.6. Significant Relationship between Research Engagement and Research Productivity

All the variables in research engagement such as institutional requirements, performance evaluation and professional title evaluation are positively correlated to all the variables in research productivity such as research completion, research publication, research presentation and research utilization.

The null hypothesis “There is no significant relationship between the factors considered by the Physical Education teacher-respondents in research engagement and their research productivity” was rejected. It indicates that the Physical Education teacher-respondents who considered more the factors in research engagement such as institutional requirements, performance evaluation and professional title evaluation also considered more research productivity in terms of research completion, research publication, research presentation and research utilization. It also indicates that the research productivity of the Physical Education teacher-respondents had something to do with the factors in research engagement.

4.3. Recommendations

Based on the conclusions of this study, the following recommendations are presented:

1. That Physical Education teachers would pursue a doctorate degree to increase their research

engagement and productivity in the field of physical education or sports;

2. That higher education institutions would create a culture of indigenous research in physical education which forms an integral part in research engagement and productivity of the teachers;

3. That university administrators would promote the value of increasing high-quality domestic journals and publication in domestic journals so that the teachers would publish in high-quality Chinese journals in physical education and according to international standards and international peer-review processes in physical education;

4. That higher education institutions, publication and conference organizers would promote and support representative works that practically address the problems in physical education in China; and

5. That Physical Education teachers and university administrators would actively engage in research presentations in physical education by demonstrating a workshop in various conferences, showcasing a poster of their remarkable research contribution or representative works, being research active in local and international research conferences, and communicating widely and visibly with local and international communities.

References

[1] Gong, Y., MacPhail, A., and Guberman, A. (2021). Professional learning and development needs of Chinese university-based physical education teacher educators. European Journal of Teacher Education. doi:10.1080/02619768.2021.1892638.

[2] Van Der Klink, M., et al. (2017). Professional development of teacher educators: what do they do? Findings from an explorative international study. Professional Development in Education, 43 (2), 163–178. doi:10.1080/19415257.2015.1114506.

[3] MacPhail, A., et al. (2019). The professional development of higher education-based teacher educators: needs and realities. Professional Development in Education, 45 (5), 848–861. doi:10.1080/19415257.2018.1529610.

[4] Aithal, S. (2016): How to Increase Research Productivity in Higher Educational Institutions – SIMS Model. *Published in: International Journal of Scientific Research and Modern Education (IJSRME) ISSN (Online): 2455 – 5630. Vol. 01, No. 01 (3 June 2016): pp. 447-458.*

[5] Roberts,A.and Weston, K., 2014. Releasing the hidden academic? Learning from teacher-educators' responses to a writing support programme. Professional Development in Education, 40 (5), 698–716. doi:10.1080/19415257.2013.835277.

[6] Xuehui, A.(2008) "Teacher Career Development and Teaching Incentives in Rural China." Beijing Normal University Journal (Social Science Edition) 2008 (3/207):117-122 (in Chinese). https://repository.upenn.edu/gansu_papers/19/

[7] Zhu, H.(2010). Curriculum reform and professional development: a case study on Chinese teacher educators. Professional Development in Education, 36 (1–2), 373–391. doi:10.1080/19415250903457604.

[8] Zhang, L.and Sivertsen, G. (2020). The New Research Assessment Reform in China and Its Implementation. Scholarly Assessment Reports, 2(1), p.3. DOI: http://doi.org/10.29024/sar.15

[9] Karachiwalla, N. & Park, A. (2015). Promotion incentives in the public sector: Evidence from Chinese Schoolshttps://iems.ust.hk/assets/publications/working-papers-2015/iemswp2015-09_rev.pdf

[10] Ka-Ho Mok, J.& Xiong, W. (2021). China and Higher Education Conference: Responding to a Changing World - Does International Higher Education Still Matter? Retrieved from https://www.ln.edu.hk/sgs/china-and-higher-education-conference-2021

[11] Han, S. & Xie, J. (2020). How COVID has changed China's approach to research evaluation? Retrieved from https://www.universityworldnews.com/post.php?story=20211208133658 68

[12] Juneja,P.(2022).The Expectancy Theory of Motivation. Retrieved from https://www.managementstudyguide.com/expectancy-theory-motivation.html