

Scoping Review on Employability Skills of Teacher Education Graduates in the Philippines: A Framework for Curriculum Enhancement

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ARTICLE INFO

Article history

Received: August 08, 2021
Accepted: October 20, 2021
Published: October 31, 2021
Volume: 9 Issue: 4

Conflicts of interest: None
Funding: None

ABSTRACT

The demand in the workplace is rapidly changing brought about by the educational reforms and the emergence of disruptive technology. The changes increase the importance of employability skills and literacy that would ensure career success and degree program relevance. On this premise, a study was carried out using a scoping review to examine the existing literature that published information related to employability skills of Teacher Education graduates in the Philippines. The review covered fifteen published articles that qualified in inclusion and exclusion criteria. Results revealed the top employable skills which include communication; information and communication technology; problem-solving and critical thinking; collaboration, cooperation, and teamwork; research; and leadership. This study offers these skills as a framework in the curriculum enhancement of teacher education programs. It was recommended to Teacher Education Institutions to revisit their curriculum and find out if these competencies were given considerable emphasis in instruction. The partially employable skills of graduates from teacher education programs imply the furtherance of the inquiry to confirm if these skills are employable or not. Future tracer studies may take the lens of the framework in evaluating the responsiveness of the curriculum.

Key words: Communication, ICT skills, Critical Thinking, Problem-solving, Collaboration, Cooperation, Teamwork, Research, Leadership

INTRODUCTION

The demand in the workplace is rapidly changing brought about by educational reforms and the emerging and disruptive technology that changes the nature of work (Asian Development Bank, 2018; McKinsey Global Institute, 2018). It is said that “the fourth industrial revolution will bring extensive changes in the nature of work” (Ra et al., 2019, p. 26). The United Nation’s Economic and Social Council underlines the importance of building digital competencies that prepare for the current wave of technological changes (United Nation- Economic and Social Council, 2018). For these fast-paced changes, relevant work experience plays a vital role and employability skills have increased in importance (Harris & Clayton, 2018). When these skills or literacies are appropriately developed in graduates, this would ensure career success and the degree program relevance is warranted.

Employability skills or sometimes called literacies are graduates’ employment capitals. Across the literature, there is no consensus as to the definition of these words (Suleman, 2016). Tentatively, employability skills or literacies refer to the competencies in which graduates can be considered for a job for acquiring them. For earlier studies, these refer

to skills reference at hiring process (Hesketh, 2000), the satisfaction of employers (Bennette, 2002), skills required by job candidates (Velasco, 2012), and the attributes demanded in the hiring process (Humburg & van der Velden, 2015). Forrier et al. (2009) for instance speak of movement capital instead of employability. These authors define employability as a movement capital that includes “individual skills, knowledge, competencies and attitudes influencing an individual’s career mobility opportunities” (p. 742).

A substantial body of literature reported several conceptual frameworks on employability skills. DeFillippi and Arthur (1994) proposed the know-how, know-why, and know-whom dimensions of employability, while Fugate et al. (2004) come up with a four-dimension framework that encompassed human capital, career identify, personal adaptability and social capital. Years after, another four-dimension model came out. Again, human capital, social capital, adaptability was included but self-awareness was added as a new dimension (Forrier et al., 2009). Van der Heijde and Van der Heijden (2006) introduced a framework with five dimensions that cover occupational expertise, corporate sense, anticipation and optimization, personal flexibility, and balance. Akkermans et al. (2013) have uniquely derived their framework with three dimensions which

include reflective, behavioral, and communicative career competencies. Peeters et al. (2019) followed in proposing a three-dimension framework composed of job-related expertise and attitudes, development-related capital, and career-related employability capital. Recently, Römogens et al. (2020) have put together literature and come up with a five-dimension framework. This includes human capital, a reflection of self and organization, lifelong learning, social capital, and work-life balance.

The 4th Philippine Graduate Tracer Study conducted by Philippine Institute for Development Studies reported that graduates feel they did not sufficiently develop communication, critical thinking, and problem-solving (Tutor et al., 2019). This was supported in a recent study that a few had inadequately acquired communication skills (Caingcoy et al., 2021). On contrary, Negro et al. (2017) reported that only the communication skills came up on top among the surveyed skills. Moreover, a study identified the top three competencies namely communication, critical thinking, and information technology skills (Ramirez et al., 2014). However, the studies of Tutor et al. (2019), Negro et al. (2017), and Ramirez et al. (2014) were not exclusive to teacher education graduates or teacher education programs.

Recently, our study revealed that the employability skills of Bachelor of Secondary Education graduates include communication, information and communication technology, pedagogy, time management, flexibility, leadership, and classroom management skills (Caingcoy et al., 2021). This was consistent in the study of Biscante et al. (2019) wherein communication skills were deemed most useful in work. Ulanday (2021) reported the top three employability skills: communication, planning and organizing, and problem-solving. One study reported that competency in researching and presenting was highly valued and is marketable. This was taken from the department chairs' perspectives who valued higher-ordered thinking skills (e.g., critical thinking and metacognition). These results suggest that these academics are disinterested in the basics such as communication and teamwork (Raadt et al., 2019). Kalaw (2019) revealed in her study on the impact of the degree program on the competency development among graduates in which the top three skills with very high impact were critical thinking, ability to solve a complex problem, and ability to work with others. However, this tracer was done among the Bachelor of Science in Mathematics.

Undoubtedly, previous findings on employability skills of teacher education graduates revealed different results, except communication skills which remained on top among skills considered. Also, earlier tracer studies throughout the country had varied trajectories. Some of them have looked into the skills and competencies of the different bachelors' degree programs in teacher education (Gines, 2014; Kalaw, 2019). There was one that determined if the degree programs were still effective, adequate, and relevant in responding to the rapid and complex changes (Gines, 2014). Likewise, Reusia et al. (2020) ascertained the adequacy and relevance of the BSE Science program through the retrospective evaluation. Ramirez et al. (2014) identified if the academic-acquired

skills and competencies are aligned to the specializations of graduates. Likewise, an inquiry assessed the alignment between the jobs of graduates and their field of specialization (Aclan et al., 2018).

To resolve the inconsistency and conflicting results, this scoping paper reviewed the existing literature on employability skills of Teacher Education graduates in the Philippines. This was to come up with an inventory and framework of employability skills that would guide policy-makers, administrators, educators, or teachers, especially the curriculum developers in enhancing Teacher Education programs. This research was conducted to draw vital and collective information for Teacher Education Institutions to consider the employability skills in the preparation of future teachers. This scoping review was guided by these questions:

1. What are the employability skills of Teacher Education graduates in the Philippines?
2. What employability skills framework can be derived from the results that would guide policy-makers, administrators, educators, especially the curriculum developers in enhancing the Teacher Education programs?

METHODOLOGY

This paper used a scoping review method in putting together previous studies that reported the employability skills of teacher education graduates in the country. Arksey and O'Malley (2005) described scoping review as a method of identifying literature to achieve in-depth results with the requirement to identify all relevant literature regardless of design. Its process is iterative and non-linear which researchers engage in reflexivity across stages. Arksey et al. (2005) outlined the stages of scoping review. This includes: identifying research questions; identifying relevant studies; study selection; charting the data; and collating, summarizing, and reporting the results. For stage 1, the study identified three research questions. In stage 2, the data collection employed the Google and Google Scholar search engines in searching for relevant literature published in journals between 2012 and 2021. With the aforementioned search engine, the collection of relevant literature was done by typing in the keywords: Employability skills of Teacher Education graduates in the Philippines. For stage 3, the researcher has carefully selected each of them by scrutinizing the abstract, its methodology, results and discussion, and conclusion sections of the paper. As an inclusion criterion, the papers were chosen if their contents reported relevant to employable skills. Thus, literature that did not directly answer the central questions was excluded. Stage 4 is closely similar to data extract in the systematic literature review. This paper organized 15 relevant pieces of literature on employability skills in a table with corresponding short details on the year of publication, authors' names (Abarro, 2017; Boholano 2012; Leyaley, 2015; Oboza, 2017; Caingcoy et al. 2021; Santillan et al. 2020; Ulanday, 2021; Posadas et al. 2021; Garcia et al. 2021; Molano, 2020; Daguplo et al. 2019; Abas et al. 2020; Abas & Imam, 2016; Belecina et al. 2017; Aquino et al., 2015). For stage 5, this scoping review employed content analysis to collate, summarize and discuss vital information.

RESULTS AND DISCUSSION

This scoping review found evidence in the context of Teacher Education which is contrary to previous findings in the 4th Philippine Graduate Tracer Study conducted by the Philippine Institute for Development Studies that graduates felt they did not sufficiently develop communication, critical thinking, and problem-solving skills (Tutor et al., 2019). On the other hand, the review confirms the report that the degree programs had an impact on the competency development among graduates in which the top three skills with very high impact were critical thinking, ability to solve a complex problem, and ability to work with others (Kalaw, 2019). From the current findings, a framework is presented to inform and guide the curriculum developers, teachers, administrators, and policy-makers in enhancing the Teacher Education programs in the country. The results are briefly summarized in Table 1.

Communication

Communication skills have been consistently identified as top among the employable skills (Posadas et al., 2021; Caingcoy et al., 2021; Oboza, 2017). These skills obtained the highest response from the BSE and BEE Graduates of the University of Rizal System (Aborro, 2017). The said result corroborates with the tracer which reported that the Teacher Education graduates of Kalinga-Apayao State College were skilled in oral communication (Leyaley, 2015). Also, the Cebu Normal University teacher education graduates were found excellent in both written and oral communication (Boholano, 2012). Moreover, teacher education graduates of Pangasinan State University, Alaminos City Campus recognized that the skills they learned from college were useful and very adequate. One of these skills was communication (Oboza, 2017). Researchers from Angeles University Foundation involved the top three employers in their tracer who assessed the alignment between the hiring requirements and graduate attributes. These employers were represented by 10 Subject Area Coordinators, 3 Education Program Supervisors, 1 human resource officer, and 1 academic coordinator. Their study revealed that communication was on top among the hiring qualification and commendable attributes of graduates (Santillan et al., 2020). Garcia and Cuizon (2021) used a retrospective appraisal of college experiences among Music, Arts, Physical Education and Health graduates of Cebu Normal University. In this study, the development of knowledge, skills, and competencies acquired from their degree programs was evaluated. Results show that oral communication skills had an excellent appraisal. In a recent tracer that involved 103 BSE graduates, it was revealed that communication skills were among the most vital competencies needed in previous, current, and future work. To add, these competencies were adequately acquired by most of the 2019 graduates at Bukidnon State University. However, a few reported they acquired these skills inadequately (Caingcoy et al., 2021). This result is consistent with a claim that communication skills were on top among the surveyed skills (Negro et al., 2017).

Critical Thinking and Problem Solving

Problem-solving skills were found very relevant to the current work of teachers (Daguplo et al 2019). Also, it was reported that problem-solving skills were useful in current work to a great extent (Belecina et al. 2017). In Ulanday (2021), problem-solving skills were ranked second next to communication skills of teacher education graduates, while thinking skills were ranked fifth among the top ten employable skills. For BSEd and BEEd graduates, critical thinking skills were believed very useful which they acquired from the general, professional and specialized courses (Abarro, 2017). From the employers' and graduates' perspectives, thinking and problem-solving skills were significantly correlated with the graduate performance at work (Abas & Imam 2016). Garcia et al. (2021) reported separately these skills in which critical thinking skills were excellent, while the problem-solving skills were adjudged very well only in terms of relevance. Critical thinking and problem-solving skills are among the skills set under a reflective dimension (Akkermans et al., 2013).

Information and Communication Technology

A retrospective mixed-methods study found that information technology skills for teaching, research, management, evaluation, and communication were appraised with an excellent verbal description. This indicates that these skills they acquired from the program were very relevant (Garcia et al., 2021). In the study of Abas et al. (2020), graduates strongly agreed that ICT skills were among the top employable skills at the same time judged as useful in their current jobs. In another inquiry, graduates were considered good at communication and information technology (Molano, 2020). Furthermore, information technology skills were deemed very relevant to present jobs (Daguplo et al., 2019). These few pieces of evidence indicate that ICT skills are essential that every teacher education should acquire in college years. With this evidence, there is indeed a need to build digital competencies that prepare for the current wave of technological changes (United Nations Economic and Social Council, 2018). If Teacher Education graduates can acquire them, they may easily adjust to the rapid changes in the workplace brought about by the emerging and disruptive technology that changes the nature of work (Asian Development Bank, 2018; McKinsey Global Institute, 2018).

Collaboration, Cooperation and Teamwork

Collaboration is among the emerging skill sets that need to be acquired by Teacher Education graduates. A study assessed the 21st-century skills of pre-service teachers which turned out that collaboration skills were considered very significant to the current work of teachers (Molano, 2020). Collaboration was among the value-laden attributes of teacher education graduates (Santillan et al. 2020). Likewise, Leyaley (2015) reported that Bachelor of Secondary Education graduates was very much skilled in cooperating. This construct is closely related to collaboration. On one hand, Posadas et al. (2021)

Table 1. Employable Skills of Teacher Education Graduates from Different Perspectives and Sources

Employability Skills	Perspectives	Sources
Communication	BEE and BSE	Abarro (2017), Boholano (2012), Leyaley (2015), Oboza (2017)
	BSE only	Caingcoy et al. (2021)
	Employers BSE math	Santillan et al. (2020), Ulanday (2021)
	Teacher Education	Posadas et al. (2021)
	BSE and MAPEH	Garcia et al. (2021)
Critical Thinking and Problem Solving	BSE and BEE	Daguplo et al. (2019)
	Graduates/employers	Abas & Imam (2016)
	BSE Math	Belecina et al. (2017)
	Teacher Education	Ulanday (2021)
	BSE and EE	Abarro (2017)
Information and Communication Technology	MAPEH	Garcia et al. (2021)
	BEE and BSE	Abarro (2017), Abas et al. (2020), Daguplo et al. (2019)
	Physical science	Molano (2020)
Collaboration, Cooperation and Teamwork	Physical Science	Molano (2020), Santillan et al. (2020)
	BSE	Leyaley (2015)
	BSE and MAPEH	Posadas et al. (2021)
Leadership	BSE and BEE	Daguplo et al. (2019)
	BSE	Leyaley (2015); Abas (2020)
	Teacher Education	Aquino et al. (2015)
Research Skills	Teacher Education	Ulanday (2021)
	BSE/BEE	Leyaley (2015), Abas (2020)
	Employers	Santillan et al. (2020)
Technical Knowledge	MAPEH	Garcia et al. (2021)
	BSE Math	Belecina et al. (2017)
Human Relations	BSE and BEE	Oboza (2017)
	BSE/BEE	Abarro (2017), Oboza (2017)
Professional Education Knowledge	MAPEH	Garcia et al. (2021)
Flexibility and Adaptability	Physical Science	Molano (2020)
Content knowledge on Specialization	MAPEH	Garcia et al. (2021)
Field Knowledge (field study and practicum)	MAPEH	Garcia et al. (2021)
Systematic Planning and Organizing of the subject matter	MAPEH	Garcia et al. (2021)
Understanding of the learning and educational processes	MAPEH	Garcia et al. (2021)
Teaching process skills	MAPEH	Garcia et al. (2021)
Pedagogy (Skills for Teaching)	MAPEH	Garcia et al. (2021)
Evaluation	MAPEH	Garcia et al. (2021)
Creativity and Innovation	Physical Science	Molano (2020)
Classroom Management	BSE	Santillan et al. (2020)
Reflective Thinking	MAPEH	Garcia et al. (2021)

support that teamwork and collaboration skills were useful in employment. On the other hand, the enhanced team spirit of graduates was believed to be very relevant to their present job (Daguplo et al., 2019). These skills are among what the previous framework considered as social capitals (Römogens et al., 2020; Fugate et al., 2004; Forrier et al., 2009).

Leadership

Leadership is among the most employable skills. Leyaley (2015) indicated graduates become skilled in leadership after graduation. BSE and BEED graduates of Saint Michael College of Caraga strongly approved that leadership was one of their employable skills (Abas et al., 2020), while the Cavite

State University Teacher Education graduates believed it is one of their employable skills (Ulanday, 2021). An inquiry indicated that employers were satisfied with the leadership skills of Batangas State University Teacher Education graduates (Aquino et al., 2015).

Research Skills

The teacher education curriculum had enhanced the research skills of graduates. To a very high extent, the curriculum impacted the knowledge, skills, and values of graduates towards research. Graduates deemed these skills relevant to their present job (Daguplo et al. 2019). This is true since the Department of Education has institutionalized research in its recent policies. In another inquiry, graduates are expected by employers to be knowledgeable in research (Santillan et al., 2020). These skills were excellently developed among graduates and were thought to be very relevant to the curriculum (Garcia et al., 2021).

Other Skills

Aside from the top six skills above, this review identified that reflective thinking, knowledge on practical application, professional education, and specialization courses including planning and organizing the subject matter, understanding the educational and learning processes, the teaching of process skills, pedagogy, and evaluation were partially employable (Garcia et al., 2021). This is so since all of these skills were found in limited evidence. This is a similar case for technical knowledge (Belecina et al. 2017; Oboza 2017), human relations (Abarro 2017; Oboza, 2017), flexibility and adaptability, creativity and innovation (Molano, 2020). These skills need more evidence from the fields to prove them they are employable.

Figure 1 illustrates the employability skills framework for Teacher Education programs. Communication is placed at the core to indicate that these skills are essential



Figure 1. Employability Skills Framework for Teacher Education Programs

in demonstrating critical thinking and problem-solving, applying information and communication technology, conceptualizing, conducting, and communicating research results as well as in collaboration, cooperation, and teamwork. Its placement does not signify that communication is more superior over the other employable skills. The bigger shape suggests how enriched evidence is which unanimously claimed that communication is always on top among employable skills of graduates. Nine of the previous studies support this claim that communication skills are the most relevant and useful skills in the workplace, especially for a teaching career (Abarro, 2017; Boholano, 2012; Leyaley, 2015; Oboza, 2017; Caingcoy et al., 2021; Santillan et al., 2020; Ulanday, 2021; Posadas et al., 2021; Garcia et al., 2021).

Critical thinking and problem-solving appeared second next to communication skills based on evidence (Daguplo et al., 2019; Abas & Imam, 2016; Belecina et al., 2017; Ulanday, 2021; Abarro, 2017; Garcia et al. 2021). Some literature took these two constructs separately. However, these concepts are closely interrelated to each other. Problem-solving skills are preceded by one's critical thinking abilities. Thus, a graduate can't become a good problem-solver when he or she is not a critical thinker. Problem-solving works more effectively when the person possessed critical thinking skills.

With the disruptive changes are driven by emerging technologies, graduates need information and communication technology skills to easily get adjusted to the changing nature of work. These changes happened oftentimes in the educational landscape. This may be the reason why ICT is among the most employable skills (Abarro, 2017; Abas et al., 2020; Daguplo et al., 2019; Garcia et al., 2021; Molano, 2020).

Collaboration, cooperation, and teamwork are essential skills for teachers. They take a share of school heads' responsibility, especially on involving parents and communities in school-based management. Bridaga Eskwela for example requires the collaborative skills of teachers to successfully prepare the school for a back better operation. In most cases, teachers are tasked to lead in organizing activities and school programs. Normally, they work as a team. Thus, teamwork as a skill is in demand. The importance of these skills was strongly supported in previous studies (Molano, 2020; Santillan et al., 2020; Leyaley, 2015; Posadas et al., 2021; Daguplo et al., 2019).

Teacher leadership is in demand since it is needed in the leadership succession in the educational system whether in basic or higher education institutions. Leadership in the educational landscape is not exclusive to school heads or administrators. Teachers are also leaders in their own right. Like their school heads, they are charged with different roles as coaches, mentors, coordinators of implemented programs, and advocacies. These roles require planning and organizing. Existing studies support that leadership is among the employable skills (Leyaley, 2015; Abas, 2020; Aquino et al., 2015; Ulanday, 2021).

After institutionalizing the culture of research in the Department of Education, research skills have become in demand among teachers. This is even part of the plus factor in their performance rating. It is also vital in their promotion.

No wonder, research becomes an employable skill (Daguplo et al., 2019; Santillan et al., 2020; Garcia et al., 2021). With these arguments, it is highly endorsed that the preparation of future teachers across degree programs of Teacher Education must be anchored on this framework. This is to better prepare them for the job demands in the 21st century. The employability skills framework may become the employability capital of Teacher Education graduates.

CONCLUSION

This scoping review concluded that there have been a considerable number of studies that identified the employable skills of teacher education graduates. The most emerging employable skills are illustrated in the framework about which include communication; information and communication technology; critical thinking and problem-solving; collaboration, cooperation, and teamwork; research; and leadership. This framework can guide Teacher Education Institution to revisit and enhance the curricular programs to align them with the job demands. Teacher Education graduates are in the best position to describe what skills are useful and relevant or not. However, one problem that occurred among studies was the lack of a common understanding of employable skills. This requires another research to deal with how these skills are understood and demonstrated from the perspectives of the employers, academics, and other stakeholders. It is recommended to Higher Education Institutions to make their next tracers inclusive of several perspectives to come up with encompassing understanding of the employable skills instead of coming up with a list or inventory solely from the graduates. The study recommended to Teacher Education Institutions to use the newly crafted framework to evaluate the responsiveness of the curriculum. This scoping review was limited to the Philippine setting and Teacher Education programs. There may be a similar review that encompasses curricular programs across disciplines.

REFERENCES

- Abarro, J. O. (2017). Employability of BSE and BEE Graduates of University of Rizal System, Antipolo City. *International Journal of Advanced Research*, 5(12), 1499-1504. <http://dx.doi.org/10.21474/IJAR01/6112>
- Abas, J. A. M. L., Alaba, L. M., Ganzan, B. J. M., & Destacamento, R. E. (2020). A Tracer Study among Teacher Education Graduates from SY 2012-2016. *Teacher Education Journal*, 2(1), 1-1.
- Abas, M. C., & Imam, O. A. (2016). Graduates' Competence on Employability Skills and Job Performance. *International Journal of Evaluation and Research in Education*, 5(2), 119-125.
- Aclan, E., Saban, G. A., Famerong, J., & Francisco, R. (2018). Tracer Study of AUP BEEed and BSED Graduates from 2012–2016. *Journal of Education, Psychology, and Humanities*, 1(1), 15-19.
- Akkermans, J., V. Brenninkmeijer, M. Huibers, & Blonk, R. W. B. (2013). Competencies for the Contemporary Career: Development and Preliminary Validation of the Career Competencies Questionnaire. *Journal of Career Development*, 40(3), 245–267.
- Aquino, A. B., Del Mundo, C. O., & Quizon, G. R. (2015). Employers' feedbacks on the performance of teacher education graduates. *Asia Pacific Journal of Multidisciplinary Research*, 3(4), 67-73.
- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International journal of social research methodology*, 8(1), 19-32. <https://doi.org/10.1080/1364557032000119616>
- Asian Development Bank. (2018). Asian development outlook (ADO) 2018: How technology affects jobs. Manila, Philippines: Asian Development Bank.
- Belecina, R. R., & Ocampo Jr, J. M. (2017). Towards quality graduate mathematics teacher education: A PNU CG-STER tracer study. *SOSIOHUMANIKA*, 10(1), 45-56. <https://doi.org/10.2121/sosiohumanika.v10i1.863>
- Bennett, R. (2002). Employers' demands for personal transferable skills in graduates: A content analysis of 1000 job advertisements and an associated empirical study. *Journal of Vocational Education and Training*, 54(4), 457–476
- Biscante, D. D. S., Clemencio, K. E., & Negado, K. L. E. (2019). Tracer Study of the Teacher Education Graduates. *Aloha International Journal of Education Advancement (AIJEA)*, 1(3), 51-58.
- Boholano, H. B., Abao, E. L., Merin, J. A., & Cardillo, M. (2016). Marketability of Filipino teacher education graduates. *Journal of Management Science and Business Intelligence*, 1(1), 1-11.
- Boholano, H. B. (2012). Employability of teacher education graduates of an Asian Public University. *JPAIR*, 9, 106-121. <http://dx.doi.org/10.7719/jpair.v9i1.12>
- Caingcoy, M. E., Ramirez, I. A. L., Gaylo, D. N., Adajar, M. I. W., Lacdag, E. O., & Blanco, G. A. B. (2021). Employment, Employability, and Competencies of Bachelor of Secondary Education Graduates. *Turkish Online Journal of Qualitative Inquiry*, 12(6), 5637 – 5645.
- Daguplo, M. S., Capili, P. L. G., Estrella, A. R. C., & Bano, A. L. (2019). Tracking the Employment and Employability Characteristics of the Graduates of the College of Teacher Education. *Asia Pacific Journal of Multidisciplinary Research*, 7(2), 67-74.
- DeFillippi, R. J., & Arthur, M. B. (1994). The Boundaryless Career: A Competency-Based Perspective. *Journal of Organizational Behavior* 15(4), 307–324
- Forrier, A., L. Sels, & Stynen, D. (2009). Career Mobility at the Intersection between Agent and Structure: A Conceptual Model. *Journal of Occupational and Organizational Psychology*, 82, 739–759.
- Fugate, M., A. J. Kinicki, & Ashforth, B. E. (2004). Employability: A Psycho-Social Construct, its Dimensions, and Applications. *Journal of Vocational Behavior* 65, 14–38.
- Garcia, M. A., & Cuizon, D. O. (2021). Old or New: Retrospective Appraisal and Work Experiences of Music, Arts, and Physical Education University Graduates. *European Journal of Physical Education and Sport Science*, 7(1), 69-84. <http://dx.doi.org/10.46827/ejpe.v7i1.3775>

- Gines, A. C. (2014). Tracer study of PNU graduates. *American International Journal of Contemporary Research*, 4(3), 81-98.
- Harris, R. & Clayton, B. (2018). Editorial: The importance of skills – but which skills? *International Journal of Training Research*, 16(3), 195-199. <https://doi.org/10.1080/14480220.2018.1576330>
- Hesketh, A. J. (2000) Recruiting an Elite? Employers' perceptions of graduate education and training. *Journal of Education and Work*, 13, 245–271.
- Humburg, M., & van der Velden, R. (2015). Skills and the graduate recruitment process: Evidence from two discrete choice experiments. *Economics of Education Review*, 49, 24–41.
- Kalaw, M. T. B. (2019). Tracer study of Bachelor of Science in Mathematics. *International Journal of Evaluation and Research in Education*, 8(3), 537–548.
- Leyaley, R. V. G. (2015). The Employability Skills of Teacher Education Graduates of the Kalinga-Apayao State College. *International Journal of Scientific Engineering and Research*, 4(6), 1-17.
- McKinsey Global Institute (MGI). (2018). *Skill shift—Automation and the future of the workforce*. McKinsey & Company.
- Molano, T. C., Cammayo, R. P., Dioses, G. M., & Dioses Jr, J. L. The Comparative Analysis of Self-Assessment of Pre-Service Physical Science Teachers on the Extent of Their Acquisition of the 21st Century Skills in Selected Regions in The Philippines. *International Journal of Scientific and Technology Research*, 9(2), 865-867.
- Negro, E. O., & Amparado, M. A. P. (2017). Employability of the University of Cebu Lapu-Lapu and Mandaue Graduates: University Tracer Study from 1997 to 2010. *IAMURE*, 88.
- Oboza, J. V. (2017). A Tracer Study of the First Batch of Teacher Education Graduates of Pangasinan State University, Alaminos City Campus. *Southeast Asian Journal of Science and Technology*, 2(1), 66-73.
- Peeters, E., J. Nelissen, N. De Cuyper, A. Forrier, M. Verbruggen, & De Witte, H. (2019). Employability Capital: A Conceptual Framework Tested Through Expert Analysis. *Journal of Career Development*, 46(2), 79–93.
- Posadas, K. F., Osabel, A. C., Dela Cruz, M. T. A., Villafior, M. R. D., Suarez, N. C., Flores, J. T., Mañas, J. L., Yago, C. S., & Adrales, D. M. (2021). Employability of teacher education graduates of Nueva Ecija University of Science and Technology, San Isidro campus. *International Journal of Applied Research*, 7(6), 159-164. <https://doi.org/10.22271/allresearch.2021.v7.i6c.8650>
- Ra, S., Shrestha, U., Khatiwada, S., Yoon, S. W., & Kwon, K. (2019). The rise of technology and impact on skills. *International Journal of Training Research*, 17(1), 26-40. <https://doi.org/10.1080/14480220.2019.1629727>
- Raadt, J. S., Harrell, P. E., & Combes, B. H. (2019). Exploring and Describing Marketable Skills in Teacher Education. *Journal of Perspectives in Applied Academic Practice*, 7(1), 26-36.
- Ramirez, T. L., Cruz, L. T., & Alcantara, N. V. (2014). Tracer study of RTU graduates: an analysis. *Researchers World*, 5(1), 66-76.
- Reusia, D. H. R., Danilo Jr, V. R., & Andres, K. P. (2020). Science education graduates of a state university from 2008-2018: A tracer study. *The Normal Lights*, 14(1).
- Römgens, I., Scoupe, R., & Beusaert, S. (2020). Unraveling the concept of employability, bringing together research on employability in higher education and the workplace. *Studies in Higher Education*, 45(12), 2588-2603. <https://doi.org/10.1080/03075079.2019.1623770>
- Santillan, J. P., Martin, J. T., & Balinas, E. S. (2020). Desired Teacher Education Graduate Attributes vis-a-vis Hiring-Related Requirements of Employers. *Universal Journal of Educational Research*, 8(4), 1461-1465. DOI: 10.13189/ujer.2020.080439
- Suleman, F. (2016). Employability Skills of Higher Education Graduates: Little Consensus on a Much-discussed Subject. *Procedia - Social and Behavioral Sciences*, 228,169 – 174.
- Tutor, M. V., Orbeta, A. C., & Miraflor, J. M. B. (2019). The 4th Philippine Graduate Tracer Study: Examining Higher Education as Pathway to Employment, Citizenship, and Life Satisfaction from the Learner's Perspective. A Discussion Paper Series No. 2019-26. Philippine Institute for Development Studies.
- Ulanday, M. L. P. (2021). Tracer Study and Employability Skills Acquisition of Teacher Education Graduates. *Psychology and Education*, 58(4), 1678-1683.
- United Nations- Economic and Social Council. (2018). Building digital competencies to benefit from existing and emerging technologies, with a special focus on gender and youth dimensions.
- Van der Heijde, C. M., & Van der Heijden, B. I. J. M. (2006). A Competence-based and Multidimensional Operationalization and Measurement of Employability. *Human Resource Management* 45(3), 449–476.
- Velasco, M. S. (2012). More than just good grades: candidates' perceptions about the skills and attributes employers seek in new graduates. *Journal of Business Economics and Management*, 13, 499–517.