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## **ABSTRACT**

This study analyzed the preservice general science curricula of selected Teacher Education Institutions (TEIs) in Region I in terms of their provision for the development of chemistry teaching competencies and examined the different teaching-learning process and strategies employed in their preservice science teacher education programs. Specifically, it looked into: a) the chemistry teaching competencies expected of prospective general science teachers bases on the Department of Education (DepED) general science curriculum and those that are developed by the TEIs; 2) the qualification of teacher educators and cooperating teachers to train prospective science teachers; 3) the confidence and competency levels of prospective a novice teachers to teach chemistry topics included in the DepED science curriculum; and 4) the relationship between their actual teaching competence and perceived level of confidence in teaching these.

Involved in the study were six TEIs which graduate at least five science majors annually, 61 prospective teachers, 28 teacher educators, 61 novice teachers, and 38 cooperating teachers. Quantitative and qualitative data were gathered through document analyses, survey questionnaires, classroom observations and unstructured interviews.

Results of the study revealed that the DepEd General Science syllabus prescribes a minimum of 25 chemistry learning competencies that need to be acquired by prospective general science teachers, most of which are of the domain-specific category and fall under declarative knowledge classification.

The TEIs' curricular offerings meet CHED's prescribed number of units for a science major/concentration, but many of the chemistry competencies prescribed by DepEd are not provided for in their courses' syllabi.

The study also revealed that the teacher educators satisfy the basic qualification requirement of being baccalaureate degree holders in the science, but a considerable number do not meet the CHED's minimum degree requirement of a master's degree. On the other hand, some cooperating teachers are not science specialists, and many have not attended any training or seminar in relation to their role as critic teachers. Furthermore, the teacher educators possess civil service eligibilities and considerable science teaching experiences, but some cooperating teachers are non-eligible. Majority of both types of respondents have attended science-related seminars but some claimed having not attended any for the last five years. Moreover, the respondents are engaged in different types of administrative and curricular activities but an activity they are least involve in is research.

Teacher educators and cooperating teacher self-ratings are high in terms of the extent to which they demonstrate chemistry teaching competencies. Nevertheless, a common problem encountered by both types of respondents is concretizing abstract concepts or relating chemistry concepts or relating chemistry concepts to everyday life.

Moreover, results of the observation of classes of cooperating teachers revealed many misconceptions/errors in their lessons; using evaluation tools that failed to measure objectives' attainment; giving priority to conceptual knowledge over procedural knowledge; limited attempt to develop higher-order thinking skills and other weaknesses.

Generally, the prospective and novice teachers had high levels of confidence in teaching chemistry topics included in the DepEd curriculum. Nevertheless, bases on the classroom observations, the competencies (knowledge and skills) they claim they have acquired were not demonstrated and the strategies they identified as most important were rely on employed by them.

In view of these findings, the following are recommended:

For the TEIs to articulate their curricula with the DepEd to make their preservice program more effective and relevant; consider offering or adding Educational Science and strategy courses; conduct periodic assessments of their preservice education programs; establish networking relationships among TEIs to include sharing of human and material resources and research endeavors/activities; provide prospective teachers with a pool of competent teacher educators and cooperating teachers by promoting professional updating on both content and pedagogy and communication skills. These must include administrative support on needed facilities and supplies.

For the DepEd to closely coordinate with the TEIs so that these institutions will support and help implement their new programs; explore the practicability of articulating the Philippine Elementary Learning Competencies and Philippine Secondary Learning Competencies into domain-general objectives particularly the strategic type; delineate the basic and most important chemistry concepts students must learn.

For the Commission on Higher Education (CHED) to closely monitor the TEIs in the implementation of their programs; impose measures to let TEIs accountable for the performance of their graduates; and intensify its scholarship and research programs for TEI faculty members.

Further research is needed in the analysis of preservice education especially on the areas of its weaknesses, effectiveness and relevance; determining how teachers could be encouraged to fully adapt activity-oriented teaching approaches and the influence of Centers of Excellence in Education in improving preservice teaching-learning processes and practices both in their own and int the TEIs within their jurisdiction.