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Perceptions of nursing educators and alumni of an effective preparation programme for the Indonesian national nursing licensure examination

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ABSTRACT

Background: Licensure examination is a tool to gauge the nursing competency level. Efforts are made to prepare nursing graduates effectively to improve their pass rate in this examination.

Aim: To describe the components of an effective preparation programme that would enhance the pass rate in the Indonesian national nursing licensure examination (NNCE).

Methodology: A content analysis method using interactive semistructured in-depth interviews to interview randomly selected course coordinators (n = 7), clinical instructors (n = 7), and nursing alumni (n = 6) of the faculty of nursing of a private university in Indonesia.

Findings: The study extracted eight themes perceived by the participants to be the components of an effective preparation programme: (1) preparation programme is integrated into the curriculum, (2) improvement of competency process standard and evaluation, and (3) holistic approach to preparation, (4) active involvement and participation, (5) knowledge and skills specialty, (6) sharp examination-taking skills, (7) strong motivation and confidence, and (8) time commitment.

Discussion: Preparation process is a significant determining factor in the success of the exam takers. The nursing faculty management and educators need to work together to provide a good preparation process.

Conclusion: A proposed effective preparation programme is to be carried out by the educators with the support of the faculty of nursing, as a programme integrated into the academic and internship programmes, and as an intensive programme after the completion of the internship programme. It is recommended that the programme be implemented to evaluate its rigor in real situations.

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Summary of relevance

Problem

Little is known about the components of an effective preparation programme for the Indonesian NNCE.

What is already known

The Preparation programme is essential to the success rate in the NNCE.

What this paper adds

New knowledge and methods to properly prepare the nursing graduates for the Indonesian national nursing competency examination, which could contribute to designing an effective preparation programme for this national licensure examination.

1. Introduction

The quality of nursing graduates' proper preparation to take licensure examination determines their performance in that examination (Odom-Maryon, Bailey, & Amiri, 2018; Puskar et al., 2017). Therefore, preparation programmes are designed to improve nursing students' and nursing graduates' readiness to take the licensure examination (Kelly & Lazenby, 2018). The strategies for success in US nursing license examination (NCLEX) include standardised exams, remedial courses, review courses, exams at the end of senior year, emphasis on critical thinking assignment, assessment module, test-taking tips, review sessions, and simulated NCLEX examination (Doyle, Harper, Burke, & Eiswirth, 2019; Pine & Schreiner, 2017).

In Indonesia, eligibility for a nursing license requires passing of the national nursing competency examination (NNCE), and according to the Ministry of Education, the national NNCE pass rate in 2016 was 49.8 %, in 2017 53.0 %, in 2018 57.1 %, and in 2019 58.6 % (Kemendikbud, 2021). These national NNCE pass rates are consid-

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Table 1
Demographic characteristics of the participant course coordinators (n = 7), clinical instructors (n = 7), and alumni (n = 6).

Characteristics	Course coordinators (%)	Clinical instructors (%)	Alumni (%)
Age (M ± SD years)	46.3 ± 6.24	37.9 ± 6.22	26.1 ± 3.76
Sex			
Male	2 (22.2)	1 (14.3)	1 (20.0)
Female	7 (77.8)	6 (85.7)	5 (80.0)
Working experience (M ± SD years)			
Nursing classroom teacher	16.3 ± 9.29	13.3 ± 5.45	-
Course coordinator	6.8 ± 5.74	-	-
Clinical instructor	-	5.8 ± 4.12	-
Ward Nurse	-	-	3.7 ± 0.95

ered low (Arifin, 2018) and the Association of Nursing Higher Education Institution of Indonesia (HPTI) reported dissatisfaction over this low national pass rate and indicated that it was due to lack of proper preparation for the examination (Astuti, 2019).

The pass rates achieved in the NNCE by the participating faculty of nursing in this study had always been lower than the average national pass rate since NNCE was first implemented. In fact, in 2018 the last batch pass rate was only 37% (Internship Department Chair, personal communication, December 18, 2018) compared to 57.1% of the average national pass rate of the same year, mentioned earlier. This matter raised some serious concerns among the management, educators, and alumni of this institution. They expressed dissatisfaction over this long-standing underachievement and a desire to both improve the condition, and they believed that every higher education institution is responsible for developing and enhancing the intellectual capacity and achievement of its students as stated by the Indonesian national law of higher education (Ristekdikti, 2020).

With the low NNCE pass rate of the participating institution and its desire to improve the pass rate, it was deemed necessary to find the components of an effective preparation programme that would enhance the NNCE pass rate of that institution.

The Indonesian government issued a specific policy on how to conduct the NNCE. However, the government does not have a specific policy nor guidelines on how the preparation programme for the NNCE should be conducted (Hartina, 2018). In addition, there is minimal information on how the preparation programme is being conducted by nursing schools in Indonesia (Mawaddah, 2020).

This study focused on describing and constructing a possible interpretation of nursing educators' and nursing alumni's perceptions of the components of an effective preparation programme that would enhance the pass rate of the NNCE. It did not focus on the stages of the implementation of the NNCE because the implementation is already regulated in detail by the government, e.g., the room temperature, dress code, etc. (Kemenristekdikti, 2018).

2. Methods

2.1. Research setting and design

This study focused on the baccalaureate nursing programme of the nursing faculty of a private boarding university located in Indonesia. The researchers chose a private university for convenience because its management can issue permits without government bureaucracies' permission.

There are two strata of nursing education in Indonesia, the 3-year diploma and the baccalaureate programme consisting of a 4-year academic programme followed by a 1-year internship programme. After the internship programme, the nursing graduates must pass the NNCE to obtain a nursing license.

This descriptive qualitative study used in-depth interviews, a method chosen considering its suitability to investigate the percep-

tions (Jimenez, Hudson, Lima, & Crabtree, 2019) of nursing educators and alumni of an effective preparation programme for the NNCE. The guide included the three main open-ended research questions followed by probing questions relevant to an effective preparation programme: (1) What are the components of an effective preparation programme? (2) How to implement an effective preparation programme? (3) Who is responsible for carrying out an effective preparation programme? A panel of four experts evaluated the validity of the interview guide.

2.2. Recruitment

The management of the university and its faculty of nursing granted institutional approval for the study. The study used purposive sampling method in selecting the participants. The researcher personally delivered invitation letters to all of the course coordinators (CC), clinical instructors (CI), collectively referred to as educators, and its alumni (AL), that work at the nearby hospital. The participants' inclusion criteria were: (1) CC and CI working full-time as for the faculty of nursing for at least 2 years and (2) alumni working full-time as ward nurses for 2 to 4 years and as first-time passers of the NNCE. Among the other reasons why the CCs and CIs were chosen for this study was that they were well-experienced educators who were very familiar with the essentials of preparation methods for the NNCE. The reason why ALs were chosen was that they experienced studying in its baccalaureate nursing programme.

Out of 46 invitees, a total of 37 responded positively to the invitation consisting of nine CCs, 14 CIs, and 14 ALs. Six ALs and three CCs declined to join for the reason of the heavy workload. The group was given an orientation to increase their awareness of the underachievement of the nursing graduates in the NNCE and the study's details. Two of the CCs were the Chairs of the Baccalaureate Nursing Programme and Nursing Internship Programme Departments. These participants' demographic details are itemised in Table 1.

2.3. Data collection

In the selection process for the face-to-face in-depth interview, the consenting participants' names were randomly selected, then listed sequentially in each of the three groups, i.e., CCs, CIs, and ALs. The participants were then recorded in sequential order, such as one CC, followed by one CI, followed by one alumnus. The selection was repeated in the same sequential order until saturation was reached, where 20 was randomly selected. Two participants were interviewed more than once.

Guided by the study's research questions, the interviewer encouraged participants to relax and talk freely about their perceptions of an effective preparation programme for the NNCE. The interview sessions were conducted at the participant's office or another place according to their preference. The interviews were dig-

itally recorded with the participants' consent and conducted in the Indonesian language for 50–60 minutes.

During the study, the researcher maintained reflexivity and self-awareness to minimise the bias of imposing ideas by playing and replaying the interview's recorded audio and transcribed verbatim. The researcher then carefully noted questions and tone of responses and kept all documents, field notes, audio recordings, and reflexive journals carefully after completing each interview session.

Data saturation (Fusch & Ness, 2015) was reached at the fifteenth participant. However, an additional one-third of the saturation number were interviewed after the saturation was reached, following the theoretical saturation in qualitative research (Hennink, Kaiser & Weber, 2019). Thus, 20 participants consisting of seven CCs, seven CIs, and six ALs were interviewed. Data were stored in a locked file in the researcher's computer, dated, and placed chronologically. The researcher was the sole person who could access the data. The files and recordings were destroyed after the study.

2.4. Ethical consideration

The Institutional Review Board (No. 2018 Nst – Qn 015), Prince of Songkla University, granted ethical approval. Participants were well-informed on the study's purpose and procedures, the right to withdraw from this study any time they wish, and the right to refuse to answer any question asked by the researcher. Each participant that agreed to participate in the interview signed informed consent. To guarantee privacy, personal identifying information, such as names and places, was removed from the transcript and replaced with codes.

2.5. Data analysis

The study used the triangulation technique to uphold integrity of the analysis. The researcher tried not to impose preconceived ideas by allowing the meanings themselves to arise from the collected data (Heffernan, 2017). In this study, the analysis of each verbatim transcript was mainly based on the steps described by Greenwood et al. (2017). The researcher checked the data for sufficiency in quality and accuracy before being analysed and ensured that the data source could be identified, such as by individual, site, and date, by using a manual tracking system.

The thematic content analysis method used in this study consists of manifest analysis, later followed by latent analysis (Bengtsson, 2016; Graneheim, Lindgren & Lundman, 2017). The manifest analysis was used to elicit themes and subthemes from the verbatim using the words themselves to describe the participants' perceptions. After the manifest analysis, latent analysis was used to interpret the verbatim of the perceptions expressed in the interviews. The interview scripts were returned to the participants for confirmation, comments, corrections, and confirmation, and the corrections were made accordingly, then prepared for content analysis.

The manifest analysis was done independently by the first author and four experts by reading and rereading the interviews verbatim several times to gain the 'feel for' the data as a whole. This analysis consisted of independent individual line-by-line coding of the transcribed data to extract themes and subthemes. The team met periodically to compare findings and resolve dissimilarities. Once the manifest themes emerged from the data, the authors then conducted the latent analysis to find the fundamental implications in the scripts to identify subthemes, then compare them with the literature for further understanding of the phenomena. The researchers consulted periodically to compare findings and resolve discrepancies until the final themes and subthemes were

Table 2
An example of steps in data transformation in content analysis.

Steps of data transformation	Statement
1. Verbatim	Some clinical instructors are responsible for handling the practicum sessions of two or three different clinical subjects. <i>For a better learning process, each clinical instructor must specialise in a more specific nursing field of knowledge, so the learning process is more efficient, and the students would understand better (AL3).</i>
2. Extracted quote	For a better learning process, each clinical instructor must specialise in a more specific nursing field of knowledge.
3. Interpretation	The participant expects that <i>each clinical instructor must specialise in a narrower field of knowledge and skills.</i>
4. Subtheme	Specializing in a clinical subject
5. Theme	Knowledge and skills specialty
6. Group of themes	Educator level
7. Higher-order theme	Components of an effective preparation programme

Note: Italics in step 1 shows the verbatim of the interview. Italics in step 3 shows the meaning interpreted from step 2.

agreed to be complete and robust. An example of data transformation is shown in Table 2.

The interviews were conducted in Indonesian, the original language of the participants, and the first author. All of the themes, subthemes, significant scripts, and quotations were first translated to English by the first author. They were then back-translated and proofread by separate professional translators to avoid the loss or change of meaning from the original data.

3. Findings

The identified components of an effective preparation programme that enhance nursing graduates' achievement in the NNCE are grouped into institution, educator, and nursing graduate levels (Fig. 1). The proposed effective programme is to be implemented in two sequential programmes. First, a preparation programme integrated into the baccalaureate programme curriculum and the one-year internship programme. Second, an intensive preparation programme is conducted after the internship programme. The groups of themes and their respective subthemes are elaborated below.

3.1. Institution level

The participants agreed that components of an effective preparation programme operating at the institution level are policies made at the faculty of nursing, including (1) integrated and intensive preparation programmes, (2) improvement of competency standard and evaluation method, and (3) holistic approach to the preparation process.

3.1.1. Integrated and intensive preparation programmes

To enhance the NNCE pass rate among nursing graduates, the participants highlighted the need for the preparation programme to be integrated early into the curriculum, even starting from the admission process with a high admission selection standard.

"An effective preparation program is a program that is integrated into the academic and practicum programs, including even as early as the high standard selection process during the admission." (CC6)

The integrated programme would emphasise more on the analysis of practical case studies (CI11, CI5, CI6) to synchronise classroom learning and clinical practicum in the ward (CI13, CC4). The

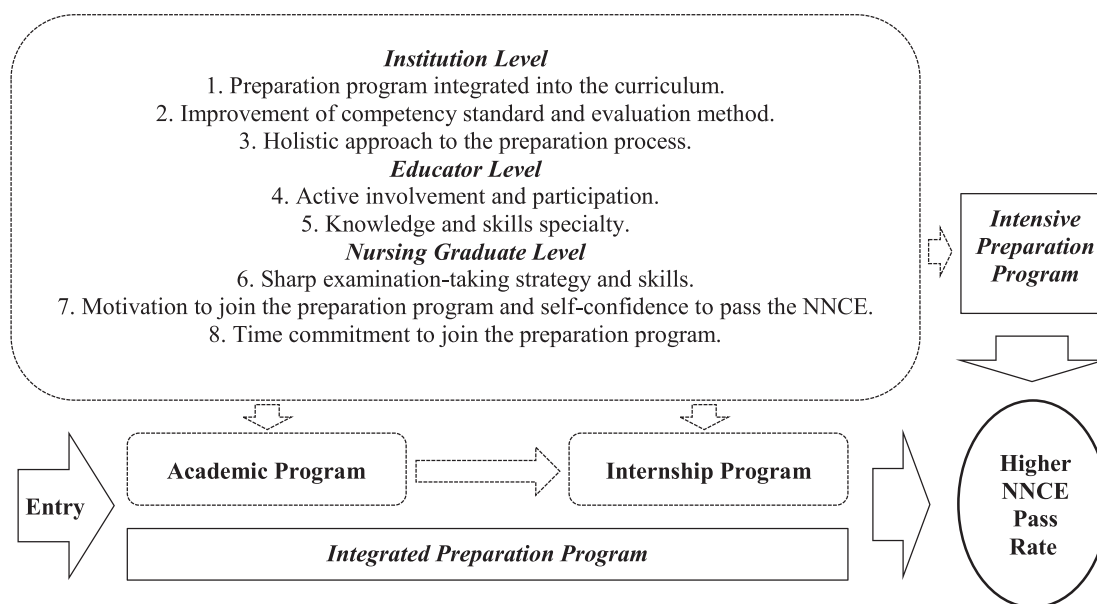


Fig. 1. Proposed components of an effective preparation programme for NNCE.

guideline on the curriculum given by the government is rather general. So, there may be inconsistencies in its implementation due to differing interpretations of the curriculum. So, there is a need to align these discrepancies.

"...therefore, there is no fixed curriculum for the nine courses. So, the content of each course may vary from time to time, ...and workshops must be conducted for the educators to align their perceptions of the objectives and contents of the courses." (C17)

The participants perceived the need for better coordination with the government through the Association of Indonesian Nurse Education Center (AINEC) to ensure stricter adherence to the national nursing curriculum because this national curriculum is the basis for the development of test questions for the NNCE (CC2, CC8, C19).

Besides being integrated into the education curriculum, a separate intensive preparation programme should also be conducted after completing the internship.

"... an intensive preparation program should be provided for the nursing graduates after having completed their internship program." (AL14)

3.1.2. Improvement of competency standard and evaluation method

Several participants said that measurable goals should be written clearly in the clinical subject workbooks as targets to be achieved by the students (CC5, C10, C13). There should be a pre-determined standard of passing score for the exit examination to supplement the clinical subjects' measurable goals. Exit examination is a final examination to determine whether a student passes or fails a clinical subject.

"Strict and objective standard should be used in determining whether a student has passed the course or not, and it should be stated clearly in the clinical subject workbooks." (C10)

In considering the importance of critical thinking skills, the participants agreed that standardised written exit examination requiring critical thinking skills should be given in each clinical subject

(CC6, C19) to prepare them for the type of questions they will meet in the NNCE.

"Standardized final examination requiring critical thinking be administered at the end of each clinical practicum subject as an exit examination...the exit examination should be made similar to the licensure examination...." (CC8)

3.1.3. A holistic approach to the preparation process

All participants expressed that that people are holistic beings consisting of physical, mental, social, emotional, and spiritual domains. Therefore, to enhance the students' overall well-being, they perceived that the preparation for the NNCE should not only focus on cognitive preparation but also on physical health, mental resilience, social support, emotional stability, and spiritual strength.

"Since we humans are whole beings consisting of physical, mental, social, emotional, and spiritual domains, the nursing graduates must be prepared holistically for the national licensure examination." (CC9)

3.2. Educator level

The participants perceived that the components of an effective preparation programme operating at the educator level are: (1) Active involvement and participation, (2) knowledge and skills specialty.

3.2.1. Active involvement and participation

The participants expressed that the CCs and CIs and the teachers teaching in the classroom setting (AL13, C16) should be involved actively in the students' overall preparation process and the nursing graduates. In the regular academic and clinical programmes, review sessions in the intensive preparation programme (AL6, CC2, C19), and in close supervision of the clinical practicum activities.

"The clinical instructors should closely supervise the clinical practicum directly because it is part of the preparation of the students for the national licensure examination." (C13)

Teamwork and synergy are to be nurtured among educators (C17, CC6), and this requires that their specific roles and responsibilities in the preparation programme be clearly stated in their job description.

"The roles and responsibilities of classroom teachers, course co-ordinators, and clinical instructors in the preparation programs should be specifically and explicitly stated in their job description, to avoid indifference and uncoordinated involvement and to ensure the smooth running of the preparation program." (C111)

3.2.2. Knowledge and skills specialty

The participants thought of the need for each preceptor of every clinical subject to have clinical skills for that specific subject. This is because a CI will accomplish better when specialised in one particular clinical subject (C15, C17, AL3). Besides the subject specialty, each CI must be certified as a CI to ensure quality clinical practicum because many of the CIs had not been certified (C19, AL5, AL13).

The participants also believed that educators should be equipped with test item development skills.

"The faculty of nursing should provide more training for the test item development skills for the teachers so that they can contribute valid test questions to the test bank, and more valid questions will be retrieved for test practice for the national licensure examination." (CC9)

3.3. Nursing graduate level

The participants expressed that the components of an effective preparation programme operating at the nursing graduate level are relevant to their involvement in the intensive preparation programme. The components consist of (1) sharp examination-taking strategy and skills, (2) motivation to join the preparation programme and self-confidence to pass the NNCE, (3) time commitment to join the preparation programme.

3.3.1. Sharp examination-taking strategy and skills

Regarding the examination-taking strategy, the participants emphasised the importance of a required independent individual study during the intensive preparation programme (CC3, AL6, AL14) to review and reinforce the nursing graduates' knowledge in the education programme thus, become better prepared for the NNCE. Another strategy is to familiarise the nursing graduates with the computer-based test system like the NNCE.

"The faculty of nursing needs to expose the nursing graduates to the computer-based test system by having a computer-based test system in the classroom and in the clinical practicum test sessions and later in the intensive review program." (CC4)

Enhancement of critical thinking skills among nursing graduates received special attention from the participants. They believed that critical thinking skills could be acquired by reviewing the answers to each test question.

"By discussing the correct and wrong answers to every question in a test after it is over, the students will not only know the 'what' but also the 'why' an answer is correct and why the other answers are incorrect. Personally, this way would have helped me learn better." (AL3)

Some participants perceived that the intensive preparation programme was for 6–8 hours a day for 2–4 months. However, the majority agreed that the programme is to be conducted a maximum of 6–7 hours a day and 5 days a week for 2 months for efficiency and effectiveness.

"...about 6–8 hours of review sessions each day for five days per week with sufficient time for relaxation, done in about two months, will be sufficient as long as it is required so that the students would attend all the sessions regularly." (CC5)

3.3.2. Motivation to join the preparation programme and self-confidence to pass the NNCE

The study's data showed a great need to develop a strong motivation to join the intensive preparation programme and strong self-confidence to pass the NNCE.

".....Furthermore, knowing that many of our seniors did not pass the national nursing licensure examination, we were all afraid already and became demotivated....we needed encouraging support. Personally, at first, I was reluctant to join the preparation program because I felt that I would not pass the national examination." (AL5)

3.3.3. Time commitment to join the preparation programme

The nursing graduates may have different reasons for having insufficient time to prepare for the NNCE. The participants believed that nursing graduates should commit to set aside priority time to prepare for the NNCE to ensure their success in this examination. The participants emphasised that there should be ample time Retrieved for the nursing graduates to prepare themselves to take the NNCE (CC9, C16, C111).

"...nursing graduates should commit to set aside priority time to join a preparation program full time. Some of my friends did not have enough time to study for the national nursing licensure examination because they had to work. They needed to pass the examination, but I think they also needed money." (AL9)

4. Discussion

The proposed integrated preparation programme could be started early by being more selective, even in the admission process, because students' performance in the admission test is correlated to their future performance in the licensure examination as supported by [Herrera & Blair, 2015](#). The preparation programme could also be integrated into the academic and internship curriculum because it is a strong determinant factor of licensure examination pass rate, as supported by [Koestler \(2015\)](#). A good curriculum facilitates the assimilation of theory and application, providing knowledge and skills needed to pass the nursing licensure examination ([Peterson & Morris \(2019\)](#)).

Studies indicate that clinical instructors may feel inadequate as educators due to their poor preparation for the responsibility ([Bastable, Sopczyk, Gramet, & Jacobs, 2019](#)). To remedy this poor preparation, the study participants recommended proper training programmes for new clinical instructors to qualify for certification. Thus, educators are expected to have higher motivation and confidence to participate in the preparation programmes actively.

A holistic approach to the preparation programme presents a more comprehensive method and several studies support the findings of this study on this proposed method. [Czekanski et al. \(2018\)](#) reported that holistic preparation promoted a positive attitude and ability to handle stress, anxiety, fear of failure that would positively impact learning and licensure examination performance ([Turner & McCarthy, 2017](#)). Another study showed that NCLEX pass rates increased significantly after a preparation programme where physical health was emphasised by requiring them to sleep 8 hours a night, exercise every day, as well as avoiding caffeine ([Puskar et al., 2017](#)). A holistic approach prepares the exam-takers more comprehensively.

Examination-taking skills are to be sharpened among nursing graduates to enhance their scores in the NNCE. These skills include computer and critical thinking skills, review drills for the intensive preparation programme, and independent individual study sessions. In support of this recommended strategy, it was reported that independent individual study is an essential part of the preparation to achieve high NCLEX scores (Johnson et al., 2017). It was also reported that significant improvement in NCLEX pass rates was observed when computer-based examinations and intensive review drills were deployed at the end of senior year (Park, 2018) and when critical thinking skills are integrated into the curriculum (Sears et al., 2015; Taylor, 2019).

Motivation and commitment to join the intensive preparation programme, as well as self-confidence to pass the NNCE among nursing graduates, are essential factors for the effectiveness of the preparation programme. It is recommended that educators need to become the source of motivation and self-confidence by creating a warm learning environment. (Lee & Ahn, 2019; Poorman, Mastorovich, & Gerwick, 2019). Inherent motivation and commitment among the nursing graduates is essential for the success of a preparation programme.

Nursing graduates need to commit priority time for the preparation programme, especially those who have struggled in their studies, to be successful in taking the licensure examination. This indication is supported by the findings of Poorman, Mastorovich, and Gerwick (2019). As recommended by the participants, the intensive preparation programme should be required of the nursing graduates for a higher NNCE pass rate, and this recommendation is supported by Puskar, Rudolf and Shi (2017). Committing priority time for the preparation programme is an indication of motivation and commitment.

This study recommends that the preparation process continues subsequently from academic and internship programmes, i.e., the integrated preparation programme to the intensive preparation programme conducted after completing the study. An intensive preparation programme, commonly carried out in many nursing schools (Puskar et al., 2017), is more common than the integrated preparation programme.

5. Limitations

While data collected from the participants provide valuable insights into a description of an effective preparation programme for the NNCE, it must be recognised that these interpretations are extracted only within a limited time span and only from one faculty of nursing. Therefore, the results cannot be generalised to other faculties of nursing. As the interviewer, the first author herself is a nursing teacher who has been working for the university for over three decades and has her own perceptions of an effective preparation programme. To uphold the findings' trustworthiness, the researcher minimised her influence on the interview process and analysis by having regular consultation meetings with members of the research team to ensure confidence in the findings' validity and trustworthiness.

Conclusion and recommendation

The study contributes new knowledge of effective preparation of the nursing graduates for the NNCE. The perceived components of an effective preparation programme consisted of eight major components. The study recommends that the programme be implemented as both integrated and intensive programmes with support from the faculty of nursing management. For further research, it is recommended that a preparation model be developed using these major components. The model will then be tested for its effectiveness and rigor in real situations, in the faculty of nursing

where this study was conducted, and next in other faculties of nursing with similar conditions.

Authorship contribution statement

Lyna M.N. Hutapea: Conceptualisation, Methodology, Validation, Formal analysis, Investigation, Data curation, Writing – original draft, Visualisation. **Karnsunaphat Balthip:** Conceptualisation, Validation, Writing – review & editing, Supervision. **Sopen Chunuan:** Conceptualisation, Methodology, Validation, Writing – review & editing, Supervision.

Ethical statement

Name of the ethics committee: Center for Social and Behavioral Services Institutional Review Board, Prince of Songkla University.

Approval number: 2018 Nst – Qn 015.

Date of approval: 13 February 2018.

Conflict of interest

We have no conflict of interest to disclose.

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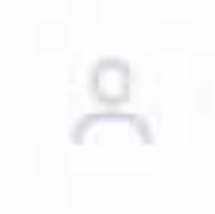
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