Clinical Judgment Rubric: Its Effects on Student's Performance and Communication Skills

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Abstract

Background: Clinical judgment has been recognized as a vital component of skilled nursing practice and helps nurses with optimal results to provide safe patient care. Nurses can need assistance to develop their clinical judgment skills, particularly those transitioning into clinical practice. **Aim:** To investigate the effects of using clinical judgment rubric on students' performance and communication skills. **Methodology:** A quasi Experimental research design was conducted during the second semester of the academic year 2018-2019 at faculty of nursing affiliated to Mansoura University at Egypt on 50 pediatric students through using pre designed questionnaire, Likert scale to assess communication skills, checklist tool and Lasater clinical judgment rubric scoring sheet. **Results**: last GPA, 26% of students had B^+, related total communication skills; mean score at pre was 14.11 ± 3.88, while at post was 29.15 ± 4.92. Also, related total performance, detected that means score at pre was 10.27 ± 3.11, while at post was 14.99 ± 2.89. **Conclusion:** Clinical judgment rubric had highly significant a positive effect on students' performance and communication skills. While, had slight improvement at students' performance.

Key words: Clinical Judgment Rubric, Communication, Teaching, Performance

Introduction:

Schools for nursing and other services for the health sector have been challenged to use expanding technology in the instructional process to endorse inventions. This educational advances entail improvements in the procedures, tactics, and environments used to deliver clinical training, all in advance of the expectation that potential learning environments (such as simulation) thus strengthening the training of health practitioner, decreasing burden on patients **(Terry & Peck, 2020).**

Clinical judgment has been identified as a critical component of professional nursing practice and enables nurses to deliver safe patient care with optimal outcomes **(Miraglia, & Asselin, 2015).** Formed on Benner's seminal novice-to-expert model and Tanner's clinical decision model, the Lasater Clinical Judgment Rubric (LCJR) was created to test simulation experience. According to Tanner's four stages of clinical judgment (noticing, understanding, reacting, and reflecting) as mentioned at figure (1), the LCJR assesses predicted student success at different levels **(Vreugdenhil & Spek, 2018).**

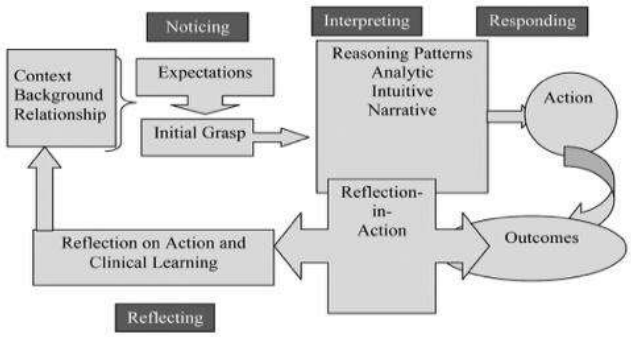

Figure (1): Clinical Judgment Model

Reprinted with permission from SLACK Incorporated. Tanner, C.A. (2006). Thinking like a nurse: A research based model of clinical judgment in nursing. Journal of Nursing Education, 45(6), 204-211.

Clinical judgment is an elusive concept that educators struggle to present and assess. Clinical judgment, specific to each situation and patient. It is used to understand patients' concerns, challenges, or issues; to reflect on important details; and to respond in an accurate and efficient manner **(Strickland, Cheshire, & March, 2017).** The development of a rubric, providing a measure of clinical judgment skill, to explore the effects of simulation on student aptitude, experience, confidence, and skill in clinical judgment. In addition, rubrics facilitate communication among students and provide students, preceptors and faculty with language to foster both feedback and discussion. **(Van Graan, Martha, & Koen, (2016).**

Simulation, as described by Morton (1995), is an effort to simulate any or almost all of the critical aspects of a clinical situation in order to make it easier to understand and treat the situation as it happens in actual clinical practice. Because simulation is a teaching method frequently used in nursing schools, effective feedback is essential for student performance improvement **(Padilha, Machado, Ribeiro, Ramos, & Costa, 2019).**

For the purpose of measuring the growth of clinical judgment skills, the LCJR may be used by educators to measure demonstrated clinical judgment behaviors and to allocate a score to a particular student/nurse. The LCJR presents the ability to rank 11 behaviors of clinical judgment across four measurement options that range from exemplary, accomplished, developed and beginning **(Román-Cereto et al., 2018).**

A standardized patient simulation (SPs) offers students with chances to apply their skills to individuals who are qualified to mimic the behaviors of a real patient in a healthy and supervised atmosphere before taking care of real patients in the clinic. There are many benefits of teaching with SPs, including enhancing the communication abilities of students with patients and teammates, strengthening therapeutic thinking, reducing the anxiety and discomfort of students and increasing their self-efficacy and research motivation **(Manetti, 2018).**

A vital part of safe nursing practice and effective health outcomes is clinical judgment. Previous research has established need to provide new graduate nurses with ongoing encouragement and instruction when they transition into service, acquire clinical expertise, and continue to expand their competence in clinical judgment **(Sabei & Lasater, 2016).**

Aim of the study:

To investigate the effects of using clinical judgment rubric on students' performance and communication skills.

Research Hypothesis:

Applying clinical judgment rubric may be expected to have a positive effect on students' performance and communication skills.

Methods:

A quasi experimental research design was conducted during the second semester of the academic year 2018-2019. This study was carried out at the skill laboratories of pediatric nursing department at the Faculty of Nursing, Mansoura University where the colostomy care procedure was taught. A convenience sample composed of 50 undergraduate nursing students enrolled in pediatric nursing course regardless age, gender and last GPA.

Sample size:

The sample size calculated based on a study carried out by **Oh, (2016) b**ased on the mean of clinical judgment 17.88 ± 2.60 for experimental and 16.61 ± 1.73 for control group and statistical power of 85%, level of confidence (1-Alpha Error): 95%, Alpha 0.05, Beta 0.15. The minimum sample size determine at group 43 students.

Tool composed of three parts:

Tool I: A structured questionnaire sheet (pre/post format)

It was designed by the researchers after reviewing the related literatures (**Hockenberry, & Wilson, 2018; Marcdante & Kliegman, 2019)** and include two parts**:**

Part one: Characteristics of studied students such as age, gender, last GPA, previous education and residence.

Part two: Students' colostomy care knowledge questionnaire which composed of ten questions covering the following items as definition, indication and types of colostomy, discharge from an ascending colostomy, nursing rational for placing skin barrier on the skin during changing pouch, warning signs of colostomy …..etc.

Each item scored as correct answer take one score; while incorrect take zero score. Then categorized on good if score ≥75 and more average if score 50 to <75% and poor if score <50%. The maximum score was 10 points.

Tool II: **Likert scale** (Pre/post format) to assess communication skills of student, it was adapted from **Nayebi & Majd Teymouri, (2015)** and include 7 questions as The ability to build relationships, The ability to open discussion, The ability to collect and analyze data, Understand the patient's point of view and The ability to sharing data with other…etc. Each item scored on five likert score 1to5 "poor, fair, good, very good and excellent". The maximum score will 35 points and minimum was 7 points. Poor communication if score 1- 7, Fair if score 8 - 14, Good if score 15- 21, Very good if score 22-28 and Excellent if score 29- 35.

Tool III: Observation Checklist (Pre/post format) was adopted from **bowden & Greenberg, (2016**) include colostomy care checklist included 10 items about emptying pouch and changing pouch include 10 items that was used to assess students' performance. Each item scored as done take one score, while not done take zero score. Then categorized on competent who gets 85% and incompetent who gets less than 85%

Tool IV: Lasater Clinical Judgment Rubric Sheet adopted from **Cato, Lasater, & Peeples, (2009)**; **Foronda, Liu, & Bauman, (2013)** and researchers was used to assess clinical judgment of students. It contained 11 items divided on four domains as noticing (3 items), interpreting (2 items), responding (4 items) and reflecting (2 items). Each item was scored as exemplary (4 points), accomplished (3 points), developing (2 points), and beginning (1point). The maximum score was 44 and minimum was 11 points (Pre/post). Higher scores indicate better clinical judgment.

Validity and reliability:

Content validity was assessed by five experts in paediatric nursing field who revised the tools for clarity, relevance, applicability and comprehensiveness. Reliability testing used to test the reliability in terms of Cronbach's Alpha IV was 0.901.

Ethical considerations:

Researchers conducted the research under the deliberation of the Research Ethics Committee under the number P.0216 at Faculty of Nursing, Mansoura University. Consent from the students group after clarification the aim and how to apply the study and ensure about confidentiality of data that will be collected.

Pilot study:

It was conducted on 5 subjects representing 10% of the sample size to ascertain the viability, clarity, replication of questions. It also helped to approximate time needed to complete interview prior to data collection.

Field work:

Researchers will explain purpose, aim, tools of data collection and process of the study to the students. Oral consent to participate in the study was received from all participants. Students (fifty) were selected by convenience way. Researchers selected a colostomy care as a topic used for applying the study. Data was collected in a pre-test prior to simulation education by using previous mentioned tool for assessing knowledge, communication, performance and clinical judgment sheet after explained the colostomy care by basic education way,

Researchers distributed the students on five small groups each group contain ten students. Based on their skills, passion, and devotion to complete the assignments, these students were chosen. The simulation teaching included caring of children with colostomy and emptying pouch. For each case, the learners were prepared for 3 hours and spent at least 3 hours a week for training before passing the evaluation. Each group completed the debriefing process utilizing the

clinical judgment rubric. Every simulation continued for one hour and featured a presentation of talents, practice, self-assessment, observations of students, and reflection. A pre-learning exercise, simulation and rehearsal, and writing in reflection diaries continued with the simulation course. To ensure the accuracy of simulation teaching, the participating teachers were educated. A post-test phase after two simulation situations that used a high-quality simulator and debriefing, through using the same tool at pre intervention.

Data collected was coded and entered through Personal Computer (PC). Computerized collected data entry and statistical analysis were performed by the Statistical Package for Social Sciences (SPSS) version 24. Data was presented in the form of number/percentage and mean ± S.D. T test used for comparing means, at significant of p value <0.05.

Results:

Table (1) revealed that 62% of studied students had 21 years, 84% of them were female. Related last GPA, 26% of them had B+. Also, showed that 70% had secondary education and 52% of them were from urban areas.

Figure (1) illustrated that 26% of the studied students had B+ in relation to last GPA.

Table (2) demonstrated that there was highly significant difference related ability to build relationships, open discussion and understand patients' point of view at pre and post intervention with p value <0.01**. Also, related total score, reported that mean score at pre was 14.11 ± 3.88, while at post was 29.15 ± 4.92, with p value <0.01**.

Table (3) stated that there was slight significant difference related colostomy care and emptying pouch at pre and post intervention with p value <0.05*. Also, related total skill performance, detected that mean score at pre was 10.27 ± 3.11, while at post was 14.99 ± 2.89, with p value <0.05*.

Figure (2) revealed that there was highly significant difference between students' total knowledge at pre and post intervention with t test 5.988 and p value <0.01**.

Table (4) demonstrated that there was highly significant difference related Focused Observation, Prioritizing Data and Calm, Confident manner at pre and post intervention with p value <0.01**. While, there was slight significant difference between Evaluation/Self-Analysis and commitment to improvement at pre and post intervention at p value <0.05**. Also, related total scale, reported that mean score at pre was 16.97±3.67, while at post was 31.43±6.78, with p value <0.01**

Figure (3) demonstrated that a highly significant difference was found between students' total practice at pre and post intervention with t test 6.957 and p value <0.01**.

Table (1): Distribution of studied students according to their characteristics (n=50)

Items	n	%
Age		
21	31	62
22	19	38
Gender		
Male	8	16
Female	42	84
Previous education		
Secondary education	35	70
Technical health institute	15	30
Residence		
Urban	26	52
Rural	24	48

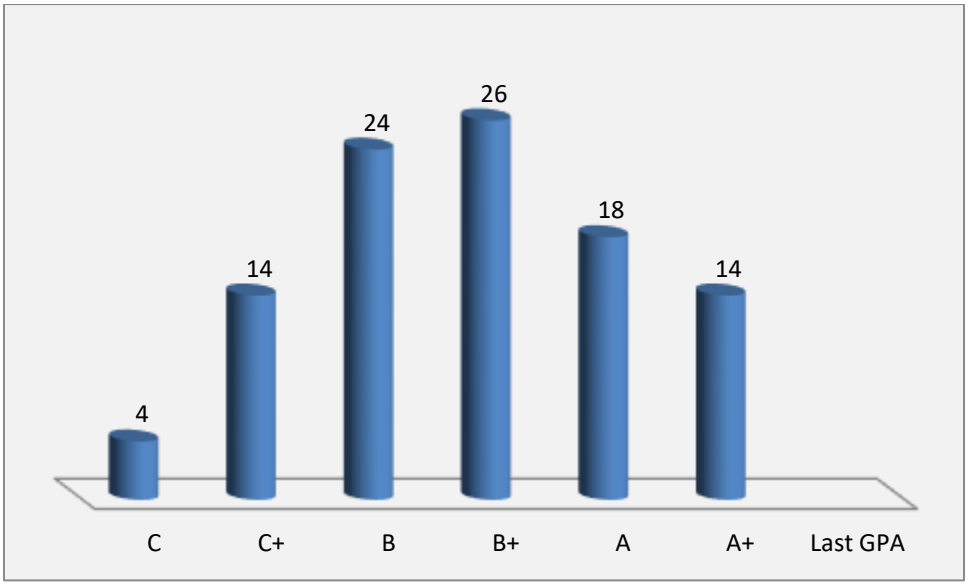

Figure (1) Percentage distribution of studied students according to their last GPA (n=50)

Table (2): Mean values of studied students concerning communication skills (pre/post) intervention (n=50)

	Pre	**Post**	**T test P value**
The ability to build relationships	1.99 ± 0.42	4.11 ± 0.66	6.99 <.01**
The ability to open discussion	2.03 ± 0.53	4.35 ± 0.71	7.85 <.01**
The ability to collect and analyze data	2.23 ± 0.61	3.84 ± 0.51	7.703 <.01**
Understand the patient's point of view	2.41 ± 0.70	4.20 ± 0.43	5.022 <.01**
The ability to sharing data with other	1.86 ± 0.34	4.16 ± 0.82	8.004 <.01**
The ability to Convergence of views	1.54 ± 0.52	3.99 ± 0.64	8.621 <.01**
The ability to summarize the discussion, end the dialogue, and prepare for the next meeting	2.05 ± 0.60	4.50 ± 0.73	7.647 <.01**
Total score	14.11 ± 3.88	29.15 ± 4.92	13.995 <.01**

Table (3): Level of total studied students' skill performance concerning colostomy care (pre/post) intervention (n=50)

Items	**Pre**		**Post**		**T test P value**
	n	**%**	**n**	**%**	
Colostomy Care					
Incompetent	37	74	18	36	3.865
Competent	13	26	32	64	<.05*
Emptying Pouch					
Incompetent	40	80	12	24	2.999
Competent	10	20	38	76	<.05*
Total skill performance Mean (SD)	10.27 ± 3.11		14.99 ± 2.89		3.676 <.05*

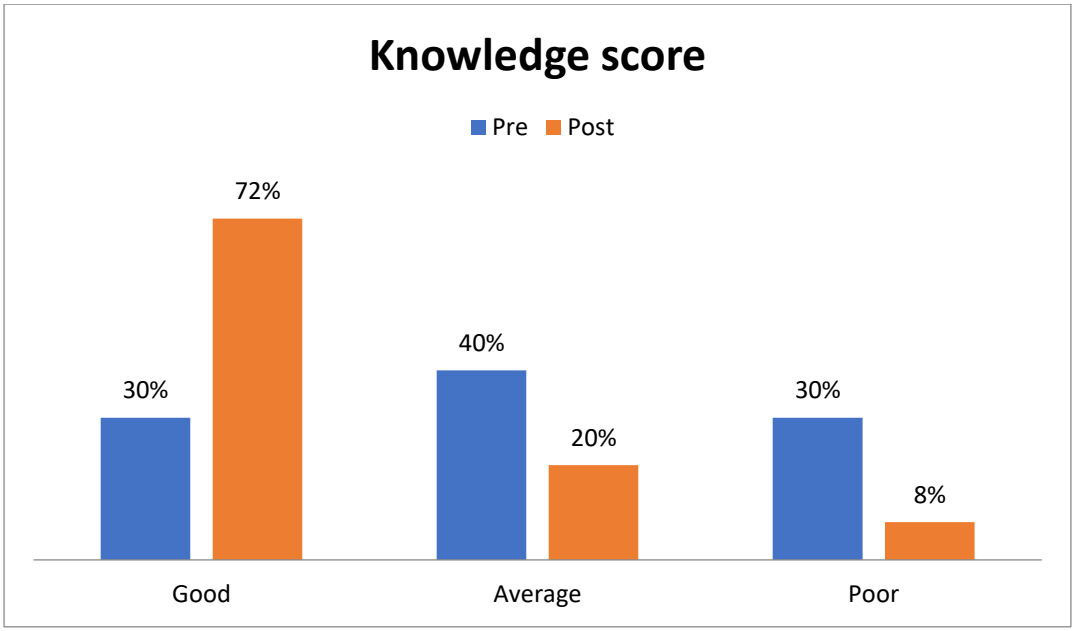

Figure (2) Percentage distribution of studied students according to their knowledge score about colostomy care (pre/post) intervention (n=50)

Table (4): Mean values of studied students concerning Lasater Clinical Judgment Rubric (pre/post) intervention (n=50)

Items	Pre	Post	T test	P value
Noticing:				
Focused Observation	1.87±0.43	3.02±0.80	4.698	<0.01**
Recognizing Deviations	2.02±0.52	3.21±0.79	2.467	<0.05*
Information Seeking	1.90±0.71	3.19±0.94	5.006	<0.01**
Interpreting:				
Prioritizing Data	1.02±0.26	2.82±0.37	4.700	<0.01**
Making Sense of Data	1.11±0.33	3.01±0.46	6.010	<0.01**
Responding:				
Calm, Confident Manner	1.19±0.51	2.39±0.64	6.128	<0.01**
Clear Communication	2.27±0.38	3.18±0.38	5.800	<0.01**
Well-Planned Intervention/Flexibility	1.80±0.46	2.70±0.52	2.994	<0.05*
Being Skillful	1.75±0.37	2.35±0.63	2.768	<0.05*
Reflecting:				
Evaluation/Self-Analysis	1.00±0.00	2.80±0.77	2.595	<0.05*
Commitment to Improvement	1.04±0.16	2.76±0.84	3.011	<0.05*
Total scale	16.97±3.67	31.43±6.78	10.554	<0.01**

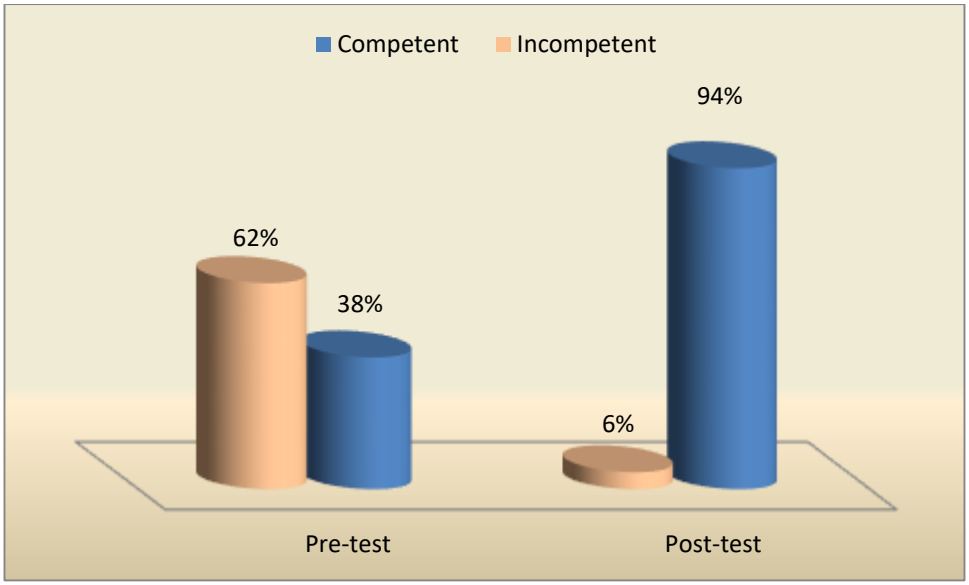

Figure (3): Percentage distribution of studied students according to their total practice score about colostomy care (pre/post) intervention (n=60)

Discussion:

Professional learning rubrics can help specialist educators to ensure that all essential material is included in instructional programs and can serve as a method to measure the competence of nurses at the end of an educational program. For any nurse, clinical judgment is seen as an important competence that differentiates experienced nurses from others in a merely technical role **(Lee, 2021).** So our study aimed to investigate the effects of using clinical judgment rubric on student's performance and communication skills.

Regarding the characteristics of studied students, the current study demonstrated that less than two thirds of studied students had 21 years, majority of them were female. Related last GPA, about one quarter of them had B+. Also, showed that more than two thirds of students had secondary education and more than half of them were from urban areas. These results explained as Nursing has traditionally been a female-dominated industry, but the percentage of male nurses has increased gradually. These results cohort with the study by **Tuomikoski, Ruotsalainen, Mikkonen, Miettunen, & Kääriäinen, 2018** at Finland with sample size 576 subjects and found majority of students were female. Also, consistent with **Gadallah, Hassan, & Shargawy, 2017** at Egypt with sample size 471 students and found that mean age was 21.73 ± 0.73 years, more than two thirds were from rural area and more than two thirds of them had general secondary school.

According to students' communication skills during clinical area, it was demonstrated that there was highly significant difference related ability to build relationships, open discussion and understand patients' point of view at pre and post intervention with p value <0.01**. Also, related total score, reported that mean score at pre was 14.11 ± 3.88, while at post was 29.15 ± 4.92, with p value <0.01**. These results explained as one of the main principles of Lasater clinical judgment rubric is improving communication skills. These results supported with the study by **Lazzara, 2020** and conducted at Winona State University and stated that LCJR had positive effect on improving communication and decreasing a gap in clinical judgment skills and a communication barrier. Also, cohort with the study by **Manetti, 2019** who reported that improving clinical judgment caused significant improvement at students' communication skills.

Related to students' knowledge, the current study reported that there was highly significant difference between students' total knowledge at pre and post intervention with t test 5.988 and p value <0.01**. Also, related total practice, detected that mean score at pre was 10.27 ± 3.11,

while at post was 14.99 ± 2.89, with p value <0.05*. These improvement in students' performance explained as simulation-based clinical education is a useful pedagogical approach that provides nursing students with opportunities to practice their clinical and decision-making skills through varied real-life situational experiences. These results inconsistent with the study by **Kim, 2018** conducted at Catholic University of Pusan on 42 students and showed that there was no significant difference in the academic self-efficacy between Lasater's clinical judgment rubrics and those with debriefing and general debriefing. While, agreement with the study by **Fenske, Harris, Aebersold, & Hartman, 2013** who found Clinical judgment is a critical component of safe nursing practice and positive patient outcomes. Also, similar with **Miraglia & Asselin, 2015** who detected that clinical judgment at nursing practice enables nurses to deliver safe patient care with optimal outcomes.

Finally the present study demonstrated that there was highly significant difference related Focused Observation, Prioritizing Data and Calm, Confident manner at pre and post intervention with p value <0.01**. While, there was slight significant difference between evaluation/self-analysis and commitment to improvement at pre and post intervention at p value <0.05**. Also, related total scale, reported that mean score at pre was 16.97±3.67, while at post was 31.43±6.78, with p value <0.01**. These results cohort with the study by **Yang et al., 2019** who reported that students in the experimental classes performed better in all subdomains of C-LCJR (noticing, interpreting, responding, and reflecting). Also, **Bussard, 2018** at Ohio on 70 students who detected that at the end of the first simulation scenario, students had a mean score of 24.10 (SD, 2.59), whereas at the end of the fourth scenario, the mean score was 40.17 (SD, 2.99). Wilcoxon signed-rank test indicated a significance in progression of clinical judgment between LCJR 1 and LCJR 4 (P G .001). And, **Kim, 2018** ; **Reid, 2016** who stated that the debriefing based on the Clinical Judgment Rubric used in this study proved to be effective in improving the clinical judgment of nursing students.

Conclusion:

Clinical Judgment Rubric had highly significant positive effect on students' performance and communication skills. While, had slight improvement at students' performance level post intervention.

Limitations:

This was a convenience sample with non-randomization, and therefore, there is no way of knowing if preexisting knowledge, experience, and skills impacted the development and progression of clinical judgment. The sample for this study is representative of the population at this particular school of nursing and is not representative of all populations.

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