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Utilizing creative drama practices for enhancing communication skills of medical students: An applied theatre intervention

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Abstract

This research explores the transformative potential of drama pedagogies in medical education by developing and implementing a creative drama-based curriculum aimed at enriching medical students' patient communication skills. The study integrates the Source-Message-Channel-Receiver Model of Communication and Cognitive Learning Theory within a framework of applied theatre practices to address this often-overlooked aspect of medical training in Thailand. Field research was conducted with a purposively selected group of twenty-two first-year medical students at a Thai university in two stages: 1) the creation of a drama-based educational intervention and 2) its subsequent evaluation using an observational assessment method. The researchers designed a series of drama activities, which were taught over six sessions, each lasting two hours. The first half of the programme introduced fundamental principles of the dramatic process, while the second half applied these processes directly to medical contexts. This structure aimed to develop two primary communication abilities: empathy and public speaking. Post-intervention evaluation revealed a substantial improvement in the participants' communication skills. This enhancement was evident across all evaluated areas and bore statistical significance at the 0.01 level. This study demonstrates the efficacy of applied theatre practices in fostering essential communication skills within medical education, an approach relatively rare in the didactic environment of Thai universities. It emphasizes the potential for theatre-based pedagogical interventions to facilitate cultural engagement, education, and social change, thereby promoting the development of innovative teaching methods for medical students.

Introduction

Interpersonal communication skills are increasingly valued as indispensable for professional success (Majid et al., 2019; Meeks, 2017). These skills facilitate social interaction and holistic human development. In the Thai healthcare system, the paramount importance of effective communication is starkly evident (Sathaporn & Pitanupong, 2022). High-profile incidents have recently illustrated a concerning lack of empathy among some medical professionals. These range from inappropriate comments to elderly patients (Amarin TV, 2018a), rude discharge of patients (Amarin TV, 2018b; Thairath Online, 2018), and late-night disputes between physicians and relatives (Amarin TV, 2022). These troubling episodes have led to tangible consequences, including legal action against medical practitioners. Issues ranging from misdiagnosis to hospital violence have also been attributed to communication gaps (Sithirangsan, 2020). In fact, in a case study of 381 complaints filed at Songklanagarind Hospital in Southern Thailand, the three most common issues were communication, service behavior, and service access (Sornlertlumvanich & Pinjareon, 2012). Data compiled by the Thai Medical Council illustrates the continued scale of this problem, with hundreds of complaints filed each year (Thrakul et al., 2023). Yet, official records represent only a fraction of actual infringements, with less than 200 annual complaints per 300 million treatments (Sithirangsan, 2020). This observation raises concerns about unreported incidents and victims seeking redress through other legal channels.

Empathetic communication is integral to the cultivation of trust in healthcare (Haribhai-Thompson et al., 2022; Steinmair et al., 2022). Poor communication can inadvertently distort intentions, resulting in misunderstandings, conflicts, and failures. In his book *Performance, Medicine and the Human*, Alex Mermikides (2020) argues that there has been a particular convergence of theatre and medicine in Western healthcare services in the twenty-first century – a phenomenon he terms medical performance and which the book credits for the increasing prevalence of drama techniques used in Western medical education. There have been similar moves to improve the level of interpersonal communication skills training in Asian medical education, which has traditionally overlooked the importance of humanist values in medical school (Zhu et al., 2022). Yet, there remains an urgent need for enhanced communication skills among medical students in Thailand, a gap that this research aims to address through the application of theatre for development. There are significant disparities between the few progressive medical schools in the country and the majority of education providers, which continue to teach primarily through didactic lectures and multiple-choice assessments (Aung et al., 2022). The present study explores creative methods to enhance communication skills through applied theatre (for the purposes of consistency in this investigation, interchangeable with drama), which incorporates performance arts and organizational development. Building upon the innovative theories of Leslie Stager Jacques (2013), these researchers believe that drama can cultivate essential communication skills in medical professionals, such as listening, observing, and self-awareness. By harnessing the use of words and bodily expressions to convey thoughts and emotions, applied theatre encourages participants to develop personal resources, placing emphasis on the learning process towards change (Gao et al., 2019; Jennings et al., 2020). By fostering better self-understanding, effective communication, and empathy, the study aims to address the significant need for improved patient interaction in Thailand's healthcare system.

Literature review

Communication theory and medical education

David Berlo's (1977) communication theory, the SMCR Model (Source-Message-Channel-Receiver), has been a seminal work in communication studies since its initial publication. Berlo (1960) introduced six components within the communication process: the communication source, encoder, message content, channel, decoder, and receiver. In instances of direct, one-to-one communication, the sender and encoder, as well as the decoder and receiver, are often the same individual. Therefore, Berlo consolidated these six components into four: the sender (*source*), the content of communication (*message*), the method of conveyance (*channel*), and the recipient of the message (*receiver*). This proved to be a more efficient framework for understanding communication and has been the most influential theory for communications development in Thailand over the past half a century (Ka-Kan-Dee & Nonthapot, 2020; Thongsrikum et al., 2020).

The SMCR model has implications for health communication and its impact has been widely explored in international literature. The importance of the *sender* was the focus of a quasi-experimental study by Rijitha and Gouda (2022) that showed how attitude, communication skills, and values significantly influence the perception of the message. In a real-world example, key *senders* during the COVID-19 pandemic clearly influenced the direction of healthcare experiences (The Lancet, 2020). The *message* also has a direct impact on promoting health communication behavior (Kachentawa & Cheyjunya, 2017). Information *messages* can vary from factual health information to guidelines for prevention and treatment, and their content must be adapted to overcome communication challenges (Brodsky et al., 2021). The choice of *channel* through which these *messages* are delivered then influences their impact and reach. Multiple *channels* are used for disseminating information in the context of healthcare and have varying impacts depending on the demographic using them (Noar & Austin, 2020; Olaimat et al., 2020). To effectively adapt *messages* to the specific contexts of different *receivers*, *senders* must understand the receiver's personal, cultural, and environmental background, emphasizing the need for a dynamic adaptation strategy in communication practices (Kurtz et al., 2005). Finally, the *receiver's* characteristics and personal attitudes have a significant influence on how *messages* are interpreted and consequently their effectiveness (Dadaczynski et al., 2021). This is the dynamic that has driven communication strategies in Thai healthcare for decades.

For Berlo, this communication framework equates to the learning process. The *message* serves as a stimulus, and the response it elicits can be equated to learning. Sensory

mechanisms - seeing, hearing, touching, smelling, and tasting - act as *channels*, decoding the received stimulus (Boonlue, 2014). This decoding process is akin to perception, leading to the interpretation and encoding of response, which is a reflexive reaction to the stimulus (Khananurak, 2004). The model thus emphasizes the necessity of the cognitive process and language use for achieving mutual understanding in communication, whose success is contingent upon various factors, particularly the *sender's* capability to transmit the message. This underlines the importance of training for *senders* (in our study, the medical students) to effectively communicate messages.

The versatility of Berlo's model is demonstrated by its ability to accommodate various media, such as person-to-person interaction and email or telephone conversations. It also enables overlap with Mehrabian's (1971) 7%-38%-55% rule of words-tone-body language. Mehrabian's theory indicates that the receiver will most likely trust tone and body language, which are irrefutably the predominant forms of communication despite criticisms of the misleading percentages (Lapakko, 2007). By integrating these insights into the educational process, educators can develop curricula that emphasize the importance of contextualizing communication to suit various patient backgrounds, enhancing both the technical and affective domains of communication. The dynamism of SMCR reflects the complexity and multifaceted nature of communication, however, there have been criticisms of the model's seeming oversimplification of the process, particularly in complex settings such as medical education (Eva & Regehr, 2005; Getchell et al., 2023). Critics argue that Berlo's model, in its linear format, might not fully encapsulate the intricacies of the feedback process in educational settings where feedback is often multidirectional and contingent on numerous factors (Parker & Coiera, 2000). Furthermore, the model insufficiently accounts for external factors that can influence communication within healthcare settings (Henry, 2019). By disregarding critical competencies such as empathy, rapport-building, and shared decision-making, the model overlooks key facets of healthcare communication, which is problematic given their significance in medical students' professional development (Kurtz et al., 2005; Veenker & Paans, 2016). As a result, additional paradigms are necessary to fully comprehend and instruct the breadth of skills requisite for effective healthcare communication.

Communication theory applied to cognitive learning theory

Bloom's (1956) Taxonomy is the go-to theory of learning effectiveness, covering each of the cognitive, affective, and psychomotor domains. As a summary, this model is a hierarchical progression, starting from basic knowledge and gradually moving towards comprehension, application, analysis, synthesis, and evaluation. For Bloom, the affective domain encapsulates psychological responses and implies the gradual development of attitudes, beliefs, interests, and virtues. Simultaneously, the psychomotor domain pertains to neuromuscular behaviors, emphasizing the acquisition and proficient use of physically demonstrable and evaluable skills. Bloom's taxonomy therefore emphasizes the necessity of a foundational understanding for learners while appreciating the differences in learning abilities. The original concept was revised by Anderson and Krathwohl (2001), who refined the dimensions and added knowledge characteristics to the taxonomy, including factual, conceptual, procedural, and metacognitive knowledge. This innovation shifted the taxonomy's focus from nouns to action-oriented verbs, such as remember, evaluate, and construct. Consequently, educators could define learning objectives more precisely while retaining Bloom's hierarchical structure. The revised taxonomy provided a framework for the authors in setting learning objectives, assessing student progress, curriculum development, and instructional methods in this study.

Within the context of healthcare, communication theorists have determined effective communication as a conduit to advise on holistic needs, provide comfort and consistency, educate care providers, improve relationships, and ensure a smooth flow of information (Henry, 2019). Medical educators have consequently developed assessment instruments to evaluate communication efficacy in medical training (Matusitz & Spear, 2014). In a critical analysis of fifteen such instruments, Schirmer et al. (2005) identified the seven-point Kalamazoo Consensus Statement as an effective measure of successful communication. Nevertheless, the study noted significant omissions, including non-verbal communication and cultural competency. Based on their review and the aforementioned criteria, the present researchers have derived eight key assessment areas crucial for effective communication training for medical practitioners:

1. Establishing a starting point – Setting a clear agenda at the beginning of the interaction to guide the patient and clinician through a structured conversation (Gobat et al., 2015).

2. Utilizing effective facial expressions – Recognizing the impact of non-verbal cues in enhancing expressiveness and empathy in communication (Oe & Murata, 2019).

3. Using appropriate tones – Modulating vocal pitch and tone to suit the emotional and informational needs of the communication (Ambady et al., 2002).

4. Demonstrating active listening and adapting communication – Showing attentiveness and adjusting communication strategies based on patient feedback and cues (Fassaert et al., 2007).

5. Presenting information clearly – Conveying medical and procedural information in a manner that is understandable and unambiguous (Chandra et al., 2018).

6. Crafting concise conclusions – Summarizing the conversation effectively to ensure clarity and retention of critical information (Song et al., 2020).

7. Projecting a professional demeanor – Maintaining conduct that fosters trust and confidence (Mikesell, 2013).

8. Employing effective gestures – Integrating gestures to complement verbal communication, enhance understanding, and demonstrate empathy (Tarigan & Stevani, 2021).

Each category was constructed to measure the explicit content of communication and capture implicit competencies (e.g. empathy, rapport-building, and sensitivity), thereby providing a holistic, multidimensional assessment of communication skills.

The role of applied theatre in medical education

Theatre is a multifaceted discipline that transcends mere acting to embody latent ideas, reflections, and emotions intended to evoke certain feelings or awareness in humans (Hamilton, 2013). Roland Barthes famously described theatre as a communication machine that simultaneously delivers various messages through different semiotic elements such as set, clothing, lighting, actor's position, gestures, sign language, and speech (Lombardinilo, 2024). This coordination of messages, he argued, is the essence of theatre (Barthes, 1972; Barthes & Duisit, 1975). Whilst theatre is a means to create excitement and entertainment, it is also a method of exchanging ideas and a form of communication that has evolved over time from simple human gestures to more complex forms such as singing and dancing (Combs & Mansfield, 1976). Given this relationship between dramatic technique and communication, it comes as no surprise that theatrical performance has been identified in a vast array of human interactions, not least in medicine (Lewandowska & Węziak-Białowolska, 2023; Weitkamp & Almeida, 2022). Theatre in its various guises has consequently become a tool for fostering learning and development through experiential activities such as performance, observation, and critical thinking (Sextou et al., 2020; Sinha & D'Souza, 2022). With this function, where drama and theatrical processes are used in non-traditional settings to engage with participants and address social issues, facilitate personal development, or achieve educational goals, theatre becomes applied theatre (Prendergast et al., 2024).

The theoretical frameworks proposed by George H. Mead and Erving Goffman provide a robust basis for understanding the dynamics of role-playing and the dramaturgical approach within applied theatre. Mead's (1967) role theory and Goffman's (1959) analysis of everyday life as a series of dramatic performances suggest that theatre can be an effective medium for training medical professionals in empathetic communication. Building on the foundational aspects of applied theatre as a platform for experiential learning and social engagement, it is clear that the principles underpinning effective interpersonal communication in therapeutic settings can be greatly enhanced through dramaturgical techniques. In medical training, for example, employing actors to simulate patient experiences can be a practical application of these theories, allowing medical professionals to practice and hone essential skills (Eisenberg et al., 2015). Most patients are not forthright in verbalizing their emotional state, often leaving clues instead. Suchman et al. (1997) clarify that empathic communication entails recognizing the potential presence of unexpressed emotions and effectively acknowledging these feelings for the patient to feel understood. This suggests that key skills such as active listening, perceptive reading, and responsive engagement to a patient's verbal and non-verbal cues, and improvisation in unforeseen circumstances should be developed, practiced, and assessed. Numerous case studies have advocated the use of applied theatre in teaching these interpersonal communication skills to medical practitioners (de Carvalho et al., 2020; Hobson et al., 2019). Theatre can enhance case presentation skills, facilitate empathy, and help practitioners grapple with ethical dilemmas, but there must be the development of a curricular rationale for these techniques to ensure their value is recognized, and not just seen as a passing trend (Kohn, 2011; Shapiro & Hunt, 2003).

Recent scholarship highlights the limitations of training that focuses solely on concrete communication skills in a checklist manner, suggesting it can restrict physicians' ability to adapt their communication to different audiences and situations (Eisenberg et al., 2015; Hoffmann-Longtin et al., 2021; Kaplan-Liss et al., 2018). Instead, Levinson et al. (2010) argue that effective relationships in healthcare require genuine personal engagement, beyond mechanical skill application. To address these needs, some medical education programs have incorporated applied improvisational theatre techniques, aiming to enhance physicians' spontaneity, flexibility, and responsiveness in communication (Hoffmann-Longtin et al., 2018; Sawyer et al., 2017). This is a direct contrast to Barthes' approach, whose sentiments have been critiqued for their reductionism and neglect of the audience's active role in creating theatrical meaning, potentially oversimplifying the dynamic and experiential nature of performance (Daddario & Wilson, 2023; Pavis, 2003). Reinforcing this critique, medical education programs increasingly view communication as a dynamic interaction, encouraging a deep understanding of the audience to tailor culturally competent messages. The effectiveness of such programs is supported by evidence suggesting that experiential learning through improvisation promotes deeper understanding and adaptability (Hoffmann-Longtin et al., 2021; Rossing & Hoffmann-Longtin, 2016). Given the dynamic and interactive nature of communication emphasized in applied improvisational theatre, the use of a rubric and observational assessment form in this study is justified as it provides a structured method to evaluate and reflect on the practical application of these skills in real-time interactions.

Acknowledging the increasingly complex social, economic, and emotional climates in which medical professionals operate, the fostering of empathy, improvisation, active listening, and responsive engagement are gaining more and more importance (Bouchard & Mermikides, 2016; Stager Jacques, 2013). The application of advanced theatre-based learning methods, such as improvisation and interactive drama, can be useful not only for medical practitioners but also for organization development practitioners in navigating complex interpersonal and organizational issues

(Macneill et al., 2016). Therefore, theatre's incorporation into professional education and training should be seen as a necessity for the development of effective, empathetic, and future-responsive professionals. The following study attempts to examine these ideas more closely in the context of a Thai medical school and answer the question: how effective are applied theatre activities in improving the communication skills of medical students?

Research methodology

The objectives of this quasi-experimental, mixed methods research are two-fold: 1) to develop a series of applied theatre activities aimed at improving the communication skills of medical students; 2) to study the impact of these applied theatre activities on the communication skills of medical students, by comparing their skills before and after the activities. This study adopts an interdisciplinary approach that is increasingly recognized as vital in exploring the complexities of medical training, including social science research paradigms that are particularly suited to the investigative aims of this study (Berger-Estilita et al., 2020). The authors chose qualitative methods of observation and structured interviews for their strength in capturing interpersonal dynamics and the depth of individual learning experiences. The authors considered these methods to align with established research in educational settings, where understanding the impact of innovative teaching methods on student outcomes is key. The choice to add quantitative analysis further supported the evaluation by enabling examination of the study's effects on the acquisition and application of communication skills. This framework was supported by literature emphasizing the effectiveness of mixed methods in educational research (Creswell & Plano Clark, 2017; Johnson & Onwuegbuzie, 2004). The investigation was conducted at Srinakharinwirot University with first-year medical students from the academic year 2022. The study population comprised 167 students, from which 22 volunteers were purposively selected. The inclusion criteria for respondents in this investigation were that students were first-year medical students at Srinakharinwirot University, their instructors consented to allow the activities to run during scheduled lesson times, and the respondents provided their consent to be included in the research and their data to be used in related reports and publications. All participants were fully informed about the purpose, methods, and potential impacts of the research prior to selection and provided their informed consent. The study was approved by the Ethics Commission of Srinakharinwirot University, ensuring that all ethical guidelines, including respect for participant autonomy and confidentiality, were strictly followed. The ethical approval number for this study was SWUEC-G355/2564E.

The researchers used two primary instruments: an observational rubric and a drama activity package. The rubric was designed to score the students' communication skills before and after the drama activity. It focused on empathy, communication, and public speaking abilities. The inclusion of public speaking in the rubric acknowledges the essential role of articulate expression in patient interactions, which Nie et al. (2020) found to be crucial to information delivery. Moreover, empathy and effective communication are considered pivotal in numerous evidence-based studies, as they directly influence patient outcomes and are central to relational practices that emphasize noticing and responding to patient emotions and cues within clinical settings (Bachmann et al., 2022; Smith et al., 2017). The observational rubric was created following a literature review and consultation with experts in drama and medical communication. The rubric was divided into eight sections, each graded on a scale from 1 to 5. To ensure the validity of the rubric, it was examined by three independent experts using the Index of Item Objective Congruence (IOC). Furthermore, its reliability was validated by employing the Intra-Class Correlation (ICC) statistic of the SPSS program using Cronbach's alpha coefficient formula.

The drama activity scheme of work was created following a review of drama- and education-related literature, document analysis, and expert interviews. The scheme was designed to be suitable for the students' learning requirements and time constraints and consisted of six sessions, each lasting two hours. The first three sessions addressed basic communication skills through drama, and the remaining three sessions applied these skills in a medical context. Details of the specific activities are available as supplements to this manuscript. The activity set was presented to three experts to evaluate its alignment with the research objectives, using the IOC. After calculating the IOC values and refining the activities based on expert feedback, the researchers taught the scheme of work to the volunteer medical students. An observation model was designed to capture data during the lessons based on insights from interviews with experts and the literature review. The observation form and the scheme of work were then reviewed by three experts to validate the tools.

The applied theatre activities were carried out with guidance from specialists in drama. All activities were conducted in Thai, and all materials were printed in Thai. Before and after the activity, the communication skills of the students were assessed using the observational rubric and assessment form by three experts (Appendix I). The researchers acknowledge that concepts like the effectiveness of tone, gestures, and vocabulary are contentious topics, which are inherently subjective. For this reason, experts in medicine, drama, and communication were all asked to judge volunteer performance, with an average taken from the three scores. The Scoring Rubric was employed to check the reliability of the observation form by examining the Interrater Reliability (IRR) from the pre- and post-activity communication skills grading. The study adopted a pre-experimental research design, conducting pre-test and post-test evaluations for data analysis. The ICC statistics were used to assess the reliability of the communication skills observations by examining the IRR. The Paired Samples T Test was applied to compare the pre-test and post-test scores of medical students' communication skills. The researchers finally analyzed all collected data using a statistical analysis package.

Results

Development of applied theatre activities for enhancing medical students' communication skills

The researchers undertook a thorough review of relevant literature and conducted field interviews to construct a model for observing communication skills, centered on appropriate criteria within the medical field. The constructed scoring rubric comprised eight skill assessment categories and five levels of communication skill observation criteria.

Table 1. The scoring rubric for evaluating medical student communication skills.

Evaluation Criteria	Ineffective (1)	Below Average (2)	Acceptable (3)	Good (4)	Excellent (5)
Establishing a starting point	Lack of introduction	Greeting and introducing the message incomplete	Greeting and introducing the message and/or purpose	Effective language use in introduction, greeting, and introducing message and/or purpose	Excellent language use in introduction, naturally connects with content, greeting, and introducing message and/or purpose
Utilizing effective facial expressions	Lack of control over facial expressions	No negative expression, but overall lack of natural facial expressions	No negative expression and some changes according to the message	Appropriate facial expressions corresponding to the message, adequate eye contact	Clear control over facial expressions to match the content, steady eye contact
Using appropriate tone	Lack of control over voice tone/volume, consistently unpleasant or inappropriate	Sometimes lacks control over voice tone/volume, sometimes unpleasant, or inappropriate	Mostly controls voice tone/volume, generally pleasant and relatively suitable	Controls voice tone/volume well, corresponds with the message, pleasant and suitable	Excellent control over voice tone/volume, adjusts to content and rhythm of communication, pleasing and appropriate
Demonstrating active listening and adapting communication	Shows no empathy or awareness of the listener's context	Shows lack of empathy or awareness of the listener's context	Shows empathy or awareness of the listener's context, but does not adjust the content to the listener	Shows empathy or awareness of the listener's context, adjusts the content to the listener to some extent	Clearly empathetic and/or aware of the listener's context, adjusts the content excellently, making it easy to understand
Presentation of information	As though reading from a script, but the vital information is incomplete	As though reading from a script, but the vital information is complete	Communicates so that the listener understands, with all essential content	Communicates so that the listener understands and shows systematic planning in the presentation	Excellent ability to communicate, organized clearly, and uses easy-to-understand methods of communication
Crafting concise conclusions	Concludes the conversation stubbornly, without summarizing content	Tries to summarize, but doesn't do it well	Summarizes, but has some defects	Concludes with an appropriate length, with all essential content	Shows excellent summarizing skills, with appropriate length, easy to understand and remember
Projecting a professional demeanor	Stooping or sitting with a stiff body. Unable to organize the body systematically. Unconfident posture. Speaker not visible	Standing or sitting with a hunched shoulder, body is stiff. Unable to organize the body systematically. Sideways stance. Speaker not visible	Standing or sitting straight with a relaxed body. Speaker partially visible	Standing or sitting upright, chest out, body relaxed. Arranges arms and legs in suitable positions. Speaker clearly visible	Standing or sitting straight, naturally confident. Arranges arms and legs excellently. Speaker clearly visible
Utilizing effective gestures	Doesn't use gestures, or, unable to control gestures	Uses gestures a little, uses too many gestures, or, is unable to organize own actions well	Uses gestures at some points and is able to organize body actions	Uses gestures appropriately, in a rhythm suitable for the message, in an appropriate quantity	Uses gestures excellently, in a rhythm suitable for the message, in an appropriate quantity, appears natural

Three experts, including an acting coach, a film and digital media lecturer, and a child and adolescent psychiatry professor, validated the rubric using the Index of Item Objective Congruence (IOC). Each criterion in the rubric was confirmed to be in line with the objectives of the assessment. The reliability of the rubric was evaluated using Interrater Reliability (IRR) and Intra-Class Correlation (ICC). Cronbach's Alpha Coefficient, a measure of internal consistency, was also calculated. The pre-activity and post-activity alpha values were .918 and .820, respectively, demonstrating very good and good levels of confidence. These results show a statistically significant correlation in the reliability of the evaluations conducted by the experts, with the recorded level of significance at p = 0.01. The rubric was therefore suitable for assessing the communication skills of medical students and is valid and reliable according to expert opinion and statistical evaluation.

The researchers subsequently developed a series of applied theatre activities to enhance medical students' communication skills. The structure of these activities was informed by David Berlo's communication theory and Bloom's learning theory. The program consisted of six sessions, each lasting two hours (Table 2).

Table 2. A summary of the six applied theatre activities.

Activity	Objective	Key Activities	Theoretical Concept	Benefits
Hello I Am	1. Relax students 2. Practice using imagination 3. Express thoughts freely 4. Pre-Test communication skills	Introduce themselves, practice activities, Pre-Test	Cognitive Domain Learning Theory: Interpret facts and draw conclusions	Familiarize, reduce tension, understand practices throughout the project phase together, pre-test communication
My Body	1. Prepare the body 2. Use the tone of voice 3. Use words appropriately 4. Use rhythm in communication	Practice activities, joint conclusion of learning	Communication Theory: Preparation of communication	Learn to use body, sounds, words, and rhythm of speech by adapting physical training of drama process
My Position	1. Practice meditation 2. Practice breathing rhythms 3. Learn to express feelings appropriately 4. Learn gestures 5. Learn the rhythm of movements	Practice activities, joint conclusion of learning	Communication Theory: Preparation of communication	Learn to relieve anxiety, concentrate, understand principles of communication, use faces, eyes, facial expressions, gestures, and rhythm of movements
Motivation and Action	1. Learn the impulse of action 2. Learn to tell stories naturally 3. Learn necessary communication skills in the medical field	Practice activities, joint conclusion of learning	Cognitive Domain Learning Theory: Interpret facts, draw conclusions, adapt and apply knowledge, embed values to control behavior	Analyze character's motivation, empathize with others, tell the story clearly, easy to understand, combine applied theatre activities with medical communication skills
In My Mind	1. Review the body of knowledge 2. Prepare before the practice test	Practice activities, joint conclusion of learning	Cognitive Domain Learning Theory: Interpret facts, draw conclusions, adapt and apply knowledge; Communication Theory: Communication Practice	Review knowledge of all 4 activities
Own Ways	1. Use communication more empathetically, communicate naturally 2. Understand the knowledge of drama, apply it to work effectively	Practice activities, joint conclusion of learning	Cognitive Domain Learning Theory: Interpret facts, draw conclusions, adapt and apply knowledge; Communication Theory: Communication Practice	Practice drama process in 5 steps until understanding and being able to apply knowledge in profession

Following the development of the applied theatre activities and communication skills observation form, the Index of Congruence (IOC) method was used to ascertain the consistency between the activity set, observation form, and objectives. The three experts found the consistency index to be 1.00.

Comparison of students' communication skills before and after the applied theatre activities

The impact of the applied theatre activities on the students' communication skills was assessed over six sessions, with evaluations conducted before and after each session by all three experts. The results showed a statistically significant improvement in communication skills following the activity, with a p-value of 0.01. The experts' use of the scoring rubric before and after the activities was tested for inter-rater reliability using Intra-Class Correlation (ICC) statistics. The analysis revealed a statistically significant agreement among the three experts' scores, with a p-value of 0.01. The final results of pre- and post-intervention assessments are recorded below in Table 3.

Conclusions

Emerging concerns within the medical field in Thailand underline the necessity of effective communication, and the results of this study align with the vision of promoting interpersonal communication skills within medical education. The creation of a series of applied

Table 3. Overall pre- and post-intervention scores for the test group.

Volunteer No.	Pre-intervention Score ($\bar{x}$)	Post-intervention Score ($\bar{x}$)	Notable Improvements	Suggestions
1	18.33	29.33	Improved word choice, volume, and eye contact	More practice with tone variation
2	12	26	Improved speech rhythm and facial expressions	Maintain consistent eye contact
3	15.33	30.33	Improved posture and voice volume	Use more appropriate gestures
4	27.67	37	Improved word choice, tone, and gestures	Practice more eye contact
5	24	37.33	Improved pronunciation, volume, and eye contact	Speak louder to boost confidence
6	20.33	35.33	Improved facial expressions, pronunciation, and gestures	Be more approachable
7	22.67	30.33	Adjusted speech, improved posture	Avoid excessive smiling
8	30.33	37.33	Improved speech speed, tone, and gestures	Control excitement for natural demeanor
9	17.67	30.67	Improved posture, more eye contact	Manage excitement in front of large audiences
10	25.67	33.67	Improved expressions and use of examples	Increase knowledge proficiency
11	23.33	32.33	Improved speech rhythm and appearance	Improve information proficiency
12	33.33	39.57	More relaxed demeanor, use of gestures	Practice speaking in front of large audiences
13	23	34.33	Improved tonal selection and gestures	Practice more eye contact and maintain a louder tone
14	21.67	33	Better word choice and tonal selection	Increase self-confidence
15	19	29.33	Increased facial expressions, improved tone	Improve voice projection
16	31	36.33	Improved eye contact, gesture use, and tone selection	More fluency and spontaneity in speech
17	22.67	36.33	Decreased anxiety, better word choice, and effective use of gestures	Continue to build confidence and maintain natural demeanor
18	27	33.67	Improved eye contact, speech pace, and gestures	Continue to work on word choice suitable for the audience
19	32.67	38.33	Improved calmness, content emphasis, and concise speech	Keep engagement with the listeners
20	26.67	32.67	Improved speech rhythm, effective use of gestures, and reliable posture	Maintain eye contact and speak more slowly
21	28.67	34.33	Improved empathy, use of examples, and voice selection	Continue practicing speaking to increase confidence
22	19.33	26	Improved eye contact, word choice, and tone selection	Continue to work on confidence, maintain eye contact, and smile more

theatre activities tailored for first-year medical students at Srinakharinwirot University. A thorough examination and interview process led to the identification of two key areas of development: empathy and public communication. These facets concern appropriate word choice, tone, eye contact, listener consideration, appropriate demeanor, and postural awareness. These areas served as the foundation for constructing a medical communication observation model and the development of drama activity sets. Using the observation, the researchers assessed skills such as initiating conversation, facial expressions, tone of voice, listening awareness, and communication adjustment. It was ensured that the activities catered to the needs of the students. This approach aligns with the role of creative drama in developing assertive behavior, self-expression, and free thinking. Post-intervention evaluation revealed a substantial improvement in the participants' communication skills. This enhancement was evident across all evaluated areas and bore statistical significance at the 0.01 level. The study demonstrates the efficacy of applied theatre practices in fostering essential communication skills within medical education and therefore advocates theatre-based pedagogical interventions for medical students.

Discussion

This study makes a significant contribution to the discourse on the role of creative drama in fostering critical skills in medical education by expanding the research field to Thailand (de Carvalho et al., 2020; Hobson et al., 2019). By aligning with cognitive and psychomotor domain learning theories, this investigation sets a precedent for Thai universities to enhance the overall effectiveness of medical communication through applied theatre. The research promotes the construction of personal style, communication expertise, and control to convey messages within the SMCR paradigm. This practical example of applied theatre for medical communication training builds on the theoretical work of Thanasin Chutintharanon (2017), which suggested that applied theatre at the heart of education can develop learning, covering interpersonal communication skills and psychological educational goals. He found that learners' exposure to activities or theatrical processes creates direct experiences, forming long-lasting memories.

Our study empirically validated Berlo's (1960) SMCR Model within the context of medical education, with notable insights regarding each of the model's core components. Specifically, our findings reinforce the work of Rijitha and Gouda (2022) by substantiating the vital role of the sender's attributes, such as their attitude and communication skills, in shaping the perception of the message. We also found that the content of the message, aligned with Kachentawa and Cheyjunya's (2017) observations, significantly influenced health communication behavior. Our empirical evidence demonstrated that messages need to be specifically tailored and adapted to overcome various communication challenges, affirming the findings of Brodsky et al. (2021). The post-class survey revealed that learners perceived word choice as the most critical skill (72%). This is despite academic research advocating the contrary (Mehrabian, 1971). Regardless, the learners' insights underscore the importance of concentration and mindfulness in communication, particularly in adverse situations where inappropriate language can exacerbate the circumstances. Subsequent skills in importance were conclusion clarity (18%), a reflection of mutual understanding, and voice tonality (9%), an aspect deemed integral to effective word choice. The learners' feedback on their preferred activities indicated a strong affinity for role-playing scenarios, which provided opportunities to address problems and discover solutions using gestures. This finding is corroborated by the high assessment scores on gesture communication in role-play scenarios where learners portrayed doctors interacting with a patient with limited Thai language proficiency.

Notwithstanding the positive outcomes of using applied theatre activities in this context, our study also underlined the limitations of Berlo's model when applied to the complexities of medical education, thus mirroring the critiques of Eva and Regehr (2005) and Getchell et al. (2023). To address these limitations, particularly Berlo's insufficient consideration of the receiver's context in communication, our integration of Bloom's taxonomy aimed to expand on the emotional and cultural dimensions of communication. This approach helped in tailoring messages more effectively to diverse audiences. Our empirical evidence suggested that the model might overlook certain critical competencies such as empathy and rapport-building, important for effective healthcare communication. On this account, we turned to the use of applied theatre as an auxiliary educational tool. By employing drama techniques that emphasize role-

playing and scenario-based learning, we facilitated a deeper understanding and practice of adaptive communication strategies. This method enriched students' abilities to modify their communicative approaches depending on the unique cultural and emotional contexts of their patients. Mirroring Eisenberg et al.'s (2015) observations, our findings demonstrated that theatre-based pedagogy significantly improved non-verbal communication and cultural competency among the participants, elements that Schirmer et al. (2005) found to be often overlooked in traditional medical communication models.

The students' average communication scores improved from good to very good after the experiment, showing that the applied theatre activities enhanced their communication skills in this limited trial. The applied theatre activities were found to be suitable for medical students as they helped develop ideas, attitudes, and understanding of people. The activities increased physical actions, making the learners' communication more natural, and emphasized the importance of word choice. This was evident when the medical students, acting as doctors, had to explain medical information to patients in everyday language. The importance of tone was also stressed in the activities and the students learnt to adjust their tone according to their audience. Furthermore, the use of facial expressions that matched the tone of voice and context improved the efficiency of communication.

Facial expressions serve as unconscious reflections of a person's thoughts and can significantly impact others. Therefore, being aware of and controlling facial expressions can help mitigate the potential negative effects on others, especially in sensitive medical settings (Versluijs et al., 2021). Introducing information such as knowledge about precautions, factors that can cause diseases, or healthcare guidelines, requires expertise on the part of the speaker. Additional introductions during such activities can enhance the listener's attentiveness to the speaker. In the medical field, the introduction stage plays a vital role in establishing rapport with patients. By starting with a greeting and self-introduction, doctors can help alleviate patients' anxiety and create an initial sense of relaxation, building a connection with patients and their families. Volunteers expressed that having a starting point is not merely an introduction but also an opportunity to foster closeness and break the ice in conversations. By introducing themselves effectively, doctors can help patients feel at ease. They should strive to establish good relationships with their listeners through self-introduction, general greetings, and explanations of objectives, steps, and timelines (Morgan, 2018).

In medicine, the end of a conversation or activity serves as a review of the conveyed information and allows the speaker to gauge the listener's understanding. Volunteers highlighted the significance of having a conclusion or summary. An ending provides an opportunity to recap the information, and check the listener's comprehension, and can be accompanied by questioning to reinforce key points. Concluding a conversation is still regarded as an essential component. Endpoint-related activities primarily focus on ensuring the listener's understanding aligns with the information communicated by the doctor. This may involve repeating or summarizing important points for clarity and to prevent message distortion. However, it is crucial to consider other factors, such as the patient's level of maturity and understanding. Kurtz (2002) also emphasizes the importance of repeating or summarizing key points from the patient's story, as it builds trust by conveying genuine interest and understanding.

The premise of communication skills training through applied theatre activities stems from the observation that knowledge acquisition through practice transcends mere information presentation (Ekebergh et al., 2004). The experiential nature of learning inherently necessitates direct learner involvement, consequently fostering comprehension and problem-solving capabilities naturally. This shows that applied theatre activities can cultivate communication skills and advocate an inside-out approach to knowledge and understanding. This method encourages learners to actively engage in knowledge creation, sequentially developing understanding through participation. The effectiveness of this approach was particularly evident in the observed transformation of the shier and more reserved volunteers during this study. The clear articulation of imagination fostered a safe space, enabling the volunteers to express themselves comfortably. These findings resonate with Willson's (2006) assertion that drama's educational application allows learners to build knowledge through classroom experiences; it facilitates cognitive re-engagement with life, community, and societal aspects. In essence, this process fosters learner understanding, inspires participation, and enhances essential actor skills such as communication, storytelling, and creativity.

Limitations and recommendations

It is acknowledged that the small sample size of 22 volunteers in this investigation could have an impact on the generalizability of the findings. Secondly, the study is based on a pre-test and post-test evaluation design without a control group, which could limit its ability to fully account for external variables. Future studies could employ a control group to respond to Anderson and Krathwohl's (2001) call for structured experimental designs to better assess educational outcomes. The observational nature of this research might also be subject to observer bias, despite the use of the observational rubric and the employment of the Interrater Reliability check. This is particularly true given the subjective nature of judgments and echoes concerns highlighted by Eva and Regehr (2005) regarding the reliability of self-assessment methods in educational settings. The researchers recommend further research into the accuracy and judgment of what makes effective communication skills. The deeper context of communication, including the subtext and nuances that determine whether communication is beneficial for the patient or the doctor, remains unexplored within the scope of this foundational study. Further research is encouraged to explore these complex dimensions, especially how applied theatre can aid in understanding and enacting good communication across different contexts and for varying purposes, especially in Southeast Asia where studies of this kind are rare.

Since the study was conducted, an interdisciplinary research group has published a new framework for effective communication in medical settings. The Glasgow Consensus Statement is "intended to function as a useful international touchstone for the training and practice of health professionals" (Makoul et al., 2024). The researchers of the present investigation recommend further analysis of the new Glasgow Consensus Statement to see how it can be applied as an alternative or complementary rubric to the one used here. This could help to refine the measures of communication effectiveness in line with international standards, which is critical in meaningful educational assessment (Stager Jacques, 2013).

Despite its limitations, this study represents a pioneering effort to explore the potential of drama-based interventions in enhancing communication skills among medical students in Thailand, not traditionally known for its innovative pedagogies in higher education. The unique observational rubric and a drama activity package demonstrate that both have the potential to be useful resources for further studies. The insights gleaned from this investigation could guide the development of more comprehensive, robust, and nuanced strategies for teaching and evaluating communication skills in Thai medical education. Future research should include larger and more representative samples, and dissecting the criteria upon which interpersonal communication skills are valued by Thai medics and patients.

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Appendix

Appendix A – Communications Skills Assessment Form

Student ID: .....

Evaluator: .....

Assessment Format:

- ☐ Before Activity
- ☐ After Activity

Overall Quality Level of Communication Skills Based on Total Score:

- **Total Score 31 – 40:** Excellent
- **Total Score 21 – 30:** Good
- **Total Score 11 – 20:** Satisfactory
- **Total Score 1 – 10:** Needs Improvement

No.	Behavior	Score	Comments
1	Establishing a starting point		
2	Utilizing effective facial expressions		
3	Using appropriate tone		
4	Demonstrating active listening and adapting communication		
5	Presentation of information		
6	Crafting concise conclusions		
7	Projecting a professional demeanor		
8	Utilizing effective gestures		
Total			

Additional Comments:

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