DEVELOPING MEDICAL AND TECHNICAL KNOWLEDGE THROUGH ASSESSMENT ALIGNED VIRTUAL PATIENT TASKS IN ENGLISH CLASSES

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Abstract

This conference paper proposes an assessment-aligned virtual patient task for developing medical and technical knowledge in English classes for medical students. It addresses the connection between understanding device-related information and explaining it to a patient in English. A focused analysis of three selected sources informed a design-based conceptual synthesis. The resulting framework links a clinical scenario, language support, observable learner products, and an analytic rubric. Its contribution is a replicable task design rather than evidence of measured learning gains. The paper discusses disciplinary accuracy, language demands, accessibility, and requirements for subsequent classroom validation.

Keywords

medical English, medical and technical knowledge, virtual patients, English for specific purposes, task design, analytic assessment.

Introduction

Medical English education requires students to connect professional content with communicative performance. Recognising the name of a device does not establish that a learner can explain its purpose or respond clearly to a patient’s question. In this paper, medical and technical knowledge denotes the ability to understand and communicate selected medical concepts, device functions, and procedure-related information in English. This operational definition connects the

paper to the dissertation on developing students’ medical and technical knowledge through innovative technologies in English classes.

ESP course design provides a rationale for linking language instruction to professional needs (Hutchinson & Waters, 1987). The action-oriented perspective also supports meaningful tasks with identifiable outcomes (Council of Europe, 2020). The design problem examined here is how a virtual patient activity can produce assessable evidence of both content understanding and communication. The paper therefore aims to develop a task framework in which the scenario, support materials, learner output, and assessment criteria address the same learning objective.

Methods

The study used a focused conceptual synthesis followed by instructional design. Three sources were purposively selected to address professional needs in ESP, action-oriented language learning, and virtual patient education. This was neither a systematic review nor an intervention study. Each source was considered through four design questions: what learners need to perform, what support they require, what observable product they produce, and how that product can be assessed. These questions informed the proposed framework; no participant data or effect estimates were generated.

The illustrative task targets B1–B2 medical English learners and uses a simulated patient asking about pulse oximetry. The content is restricted to describing the device’s purpose, explaining a simple procedure from an approved teaching script, and checking patient understanding. Students do not diagnose the simulated patient or make treatment decisions. Materials comprise a short device description, a glossary, patient prompts, and an audio recording tool. The proposed assessment descriptors were derived from the task requirements and remain subject to empirical validation.

Results

The first design outcome is an alignment sequence. The learning objective is to explain device-related information accurately and understandably in English. Before the simulation, learners extract key information from a short text and prepare a plain-language explanation. During the simulation, the virtual patient asks what the device measures and whether the procedure will hurt. Learners respond, invite questions, and check understanding. After the simulation, they submit a brief audio explanation and a reflection identifying one content issue and one communication issue. A revised recording supplies evidence of feedback uptake.

The second outcome is a three-dimension analytic rubric. Terminological accuracy concerns the appropriate use of target vocabulary. Content accuracy concerns consistency with the approved device description and teaching script. Communicative clarity concerns understandable sequencing, plain language, and responses to patient questions. Each dimension receives 0 points for absent or seriously inaccurate performance, 1 for partially successful performance requiring support, or 2 for clear and independent performance. Proposed overall bands are low at 0–2, intermediate at 3–4, and high at 5–6. These are provisional classroom descriptors, not validated proficiency standards.

The third outcome is a practical implementation rule: every digital feature must support an observable learning product. Branching prompts elicit responsive explanations, recordings enable review, and feedback guides revision. A text-based patient dialogue can replace an interactive platform when resources are limited. The framework thus separates the instructional function from the cost or sophistication of the technology.

Discussion

The proposed framework connects medical content and English performance without treating fluent speech as sufficient evidence of technical understanding. A learner may speak smoothly while giving an inaccurate explanation, or understand the device while relying on excessive jargon. Separate rubric dimensions make these differences visible and support targeted feedback. However, the rubric should not be

interpreted as a measure of clinical competence; its scope is a defined medical English teaching task.

Evidence from virtual patient research warrants a cautious transfer to language education. Kononowicz et al. (2019) reported mixed findings and methodological limitations in health professions education. Their review supports examining virtual patients as an educational option, but does not establish the effectiveness of this particular English-language task. Validation should use comparable pre-task and post-task assessments, independent raters, and analysis of recorded responses. Learner language level and familiarity with the device should also be documented to distinguish communication difficulties from content gaps.

Conclusion

An assessment-aligned virtual patient task offers a concrete way to operationalise medical and technical knowledge in English instruction. The conceptual contribution is the explicit connection between device information, patient-facing explanation, feedback, and assessable learner products. Classroom research is needed to determine feasibility, scoring reliability, and learning outcomes before effectiveness claims can be made.

References

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