

IDENTIFICACIÓN DE UN PROBLEMA DE INVESTIGACIÓN

Seleccionar un problema de investigación

- Realizar preguntas adecuadas.
- Interesantes
- Originales
- Significativas
- Investigables
- Factibles

Identificando el problema

Puntos importantes

- Leer
- Discutir
- Conceptualizar
- Se tendrá un conjunto de aproximaciones al problema una vez que se revisen conceptos y factores asociados.



Tips

- Identifique efectos de un problema
- Identifique causas del problema
- Identifique las causas de las causas (si las hubiera)
- Identifique solo aquellas que son significativas, factibles de realizar, etc.
- Realice un gráfico de causas/efectos/problema y solo enfóquese en aquellas características buenas de una investigación.

Diagrama Causa Efecto o de espina de pez (fishbone analysis)



<http://fishbonediagram.org/example-1-poor-product-quality/>

Si existen causas y efectos

- Existe un problema....
- Y Ud. lo ha identificado!
- PERO.... Debe declararlo

Declaración del problema

- Preferible declárelo de manera general y luego irlo modificando a medida que conocemos más de él.
- La declaración es la descripción de las evidencias de que existe (efectos) y de las posibles causas que lo generan.

Formas complementarias de redactar un problema

- Pueden ser redactados de manera descriptiva y finalmente terminar en la elaboración de una pregunta de investigación.

Requisitos para preguntas de investigación

- Que no se conozcan las respuestas.
- Que puedan responderse con evidencia empírica (datos observables o medibles).
- Que impliquen usar medios éticos.
- Que sean claras.
- Que el conocimiento que se obtenga sea sustancial (que aporte conocimiento a un campo de estudio).

Ejemplos de temas (malos)

- Métricas de Objetos de Aprendizaje
- Las Tecnologías de Información y Comunicación en la Educación
- Algoritmos de reconocimiento de gestos

Ejemplos de temas (buenos)

- Determinación de métricas generadas automáticamente de Objetos de Aprendizaje en repositorios académicos.
- Las Tecnologías de Información y Comunicación en la Educación y su impacto sobre los aprendizajes de los niños.
- Efectividad del Algoritmo X para reconocimiento de gestos y posturas en tiempo real, utilizando un guante de realidad virtual.

Por qué son buenos?

Ejemplos de preguntas (buenas)

- ¿Cuáles son los factores que permiten determinar métricas de manera automática para la clasificación de objetos de aprendizaje en repositorios académicos?
- ¿Cuál es el impacto de las tecnologías de información y comunicación en los aprendizajes de niños?
- ¿Cuán efectivo es el algoritmo X para reconocer posturas y gestos en tiempo real, al utilizar un guante de realidad virtual?

En resumen...

- Una buena redacción de un problema debería proveer al investigador con dirección clara de cómo conducir una investigación.
- Debe indicar el foco / propósito y el contexto en el que se realizará la investigación.
- Se deben definir además factores claves, causas, efectos y un marco teórico general para reportar los futuros resultados.
- La redacción debe ser: PRECISA y DEFINITIVA para que no haya confusión en relación a lo que se estudia/investiga.

Taller en grupo

De los siguientes resúmenes de artículos realizar lo siguiente:

- Cuál es el problema? O pregunta de investigación del artículo? Escribanlo, textualmente.
- Cuál es el contexto en el que se llevará a cabo la investigación.
- Si el problema de un artículo dado estaba escrito como declaración, cámbielo a pregunta de investigación y viceversa.
- Nota:
 - Comenten lo encontrado por cada uno y contrasten respuestas.
 - Critique las decisiones tomadas por sus compañeros.

Title: Evaluating informatics applications—clinical decision support systems literature review.

Abstract: This paper reviews clinical decision support systems (CDSS) literature, with a focus on evaluation. The literature indicates a general consensus that clinical decision support systems are thought to have the potential to improve care. Evidence is more equivocal for guidelines and for systems to aid physicians with diagnosis. There also is general consensus that a variety of systems are little used despite demonstrated or potential benefits. In the evaluation literature, the main emphasis is on how clinical performance changes. Most studies use an experimental or randomized controlled clinical trials design (RCT) to assess system performance or to focus on changes in clinical performance that could affect patient care. Few studies involve field tests of a CDSS and almost none use a naturalistic design in routine clinical settings with real patients. In addition, there is little theoretical discussion, although papers are permeated by a rationalist perspective that excludes contextual issues related to how and why systems are used. The studies mostly concern physicians rather than other clinicians. Further, CDSS evaluation studies appear to be insulated from evaluations of other informatics applications. Consequently, there is a lack of information useful for understanding why CDSSs may or may not be effective, resulting in making less informed decisions about these technologies and, by extension, other medical informatics applications.

Kaplan, Bonnie. "Evaluating informatics applications—clinical decision support systems literature review." *International journal of medical informatics* 64.1 (2001): 15-37.

Title: Human activity recognition from object interaction in domestic scenarios

Abstract: This paper presents a real time approach to the recognition of human activity based on the interaction between people and objects in domestic settings, specifically in a kitchen. Regarding the procedure, it is based on capturing partial images where the activity takes place using a colour camera, and processing the images to recognize the present objects and its location. For object description and recognition, a histogram on rg chromaticity space has been selected. The interaction with the objects is classified into four types of possible actions; (unchanged, add, remove or move). Activities are defined as receipts, where objects plays the role of ingredients, tools or substitutes. Sensed objects and actions are then used to analyze in real time the probability of the human activity performed at particular moment in a continuous activity sequence.

[Flores Vázquez, Carlos Alberto, 2016]

Title: Relationship between medication errors and adverse drug events.

Abstract:

OBJECTIVE: To evaluate the frequency of medication errors using a multidisciplinary approach, to classify these errors by type, and to determine how often medication errors are associated with adverse drug events (ADEs) and potential ADEs.

DESIGN: Medication errors were detected using self-report by pharmacists, nurse review of all patient charts, and review of all medication sheets. Incidents that were thought to represent ADEs or potential ADEs were identified through spontaneous reporting from nursing or pharmacy personnel, solicited reporting from nurses, and daily chart review by the study nurse. Incidents were subsequently classified by two independent reviewers as ADEs or potential ADEs.

SETTING: Three medical units at an urban tertiary care hospital.

PATIENTS: A cohort of 379 consecutive admissions during a 51-day period (1,704 patient-days).

INTERVENTION: None.

MEASUREMENTS AND MAIN RESULTS: Over the study period, 10,070 medication orders were written, and 530 medication errors were identified (5.3 errors/100 orders), for a mean of 0.3 medication errors per patient-day, or 1.4 per admission. Of the medication errors, 53% involved at least one missing dose of a medication; 15% involved other dose errors, 8% frequency errors, and 5% route errors. During the same period, 25 ADEs and 35 potential ADEs were found. Of the 25 ADEs, five (20%) were associated with medication errors; all were judged preventable. Thus, five of 530 medication errors (0.9%) resulted in ADEs. Physician computer order entry could have prevented 84% of non-missing dose medication errors, 86% of potential ADEs, and 60% of preventable ADEs.

CONCLUSIONS: Medication errors are common, although relatively few result in ADEs. However, those that do are preventable, many through physician computer order entry.

Bates, David W., et al. "Relationship between medication errors and adverse drug events." *Journal of general internal medicine* 10.4 (1995): 199-205.