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THE 2019 FRPA  
CONFERENCE!



**Arts, Sciences  
& Education**

FLORIDA INTERNATIONAL UNIVERSITY

*ALICIA POLA, MS, CTRS, CCLS  
INSTRUCTOR RECREATIONAL THERAPY, FIU*

*APOLA@FIU.EDU*

*305-348-3472*



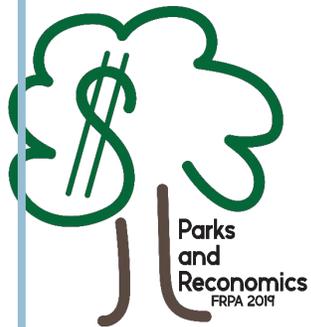
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*TANIA SANTIAGO PEREZ, MS, CTRS  
INSTRUCTOR RECREATIONAL THERAPY, FIU*

*TSANTIAG@FIU.EDU*

*305-348-3220*



*RESEARCH 101:*

*HOW TO CONSUME  
AND PRODUCE  
RESEARCH*



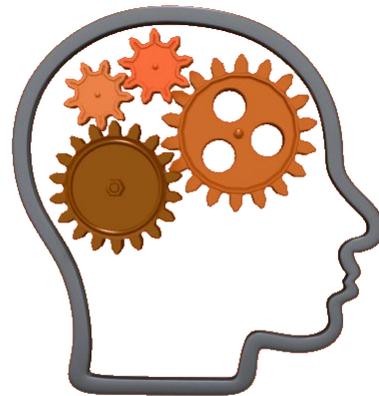
# LEARNING OBJECTIVES

- o *Define research and recognize the different types of research designs*
- o *Identify databases and journals that can be accessed for research, and the parts of a research article*
- o *Discuss strategies to consume and produce research including evidence-based practice and practice-based evidence*

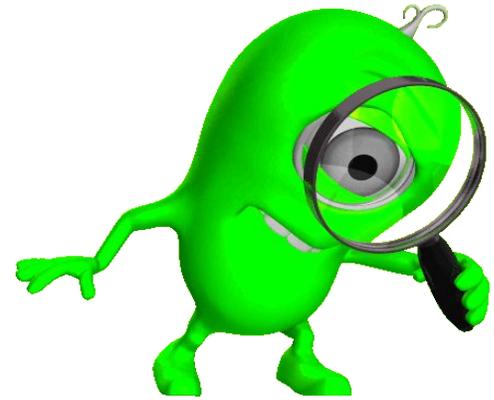


# WHAT IS RESEARCH?

*A systematic process of collecting, analyzing, and interpreting information/data in order to increase our understanding of a phenomenon and gain new knowledge.*



# THE RESEARCH PROCESS



## EXPLORATION

1. *Research Question*
2. *Literature Review*
3. *Theory*

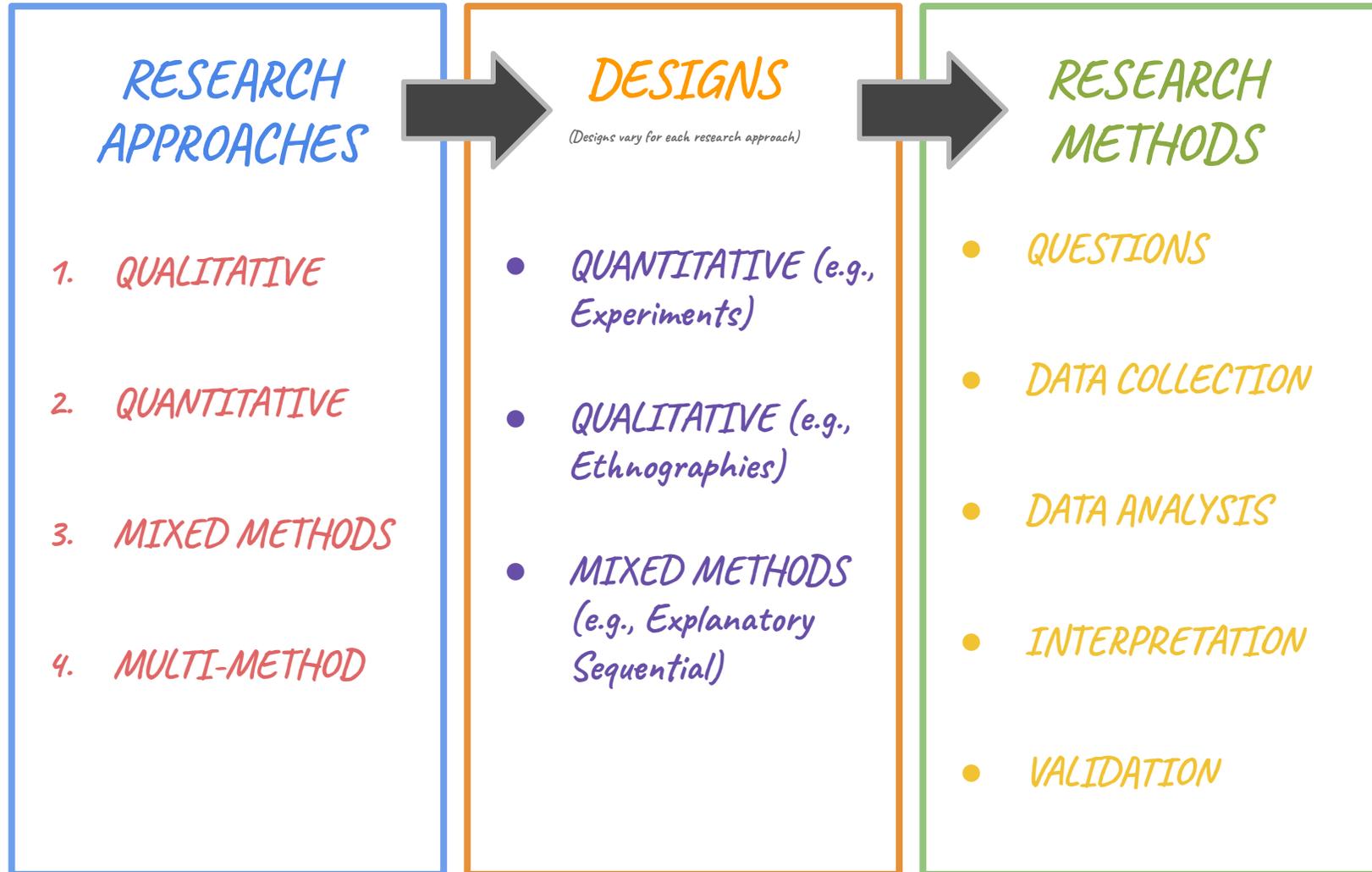
## RESEARCH EXECUTION

1. *Research Proposal*
2. *Pilot Testing*
3. *Data Collection*
4. *Data Analysis*
5. *Research Report*

## RESEARCH DESIGN

1. *Operationalization*
2. *Research Method*
3. *Sampling Strategy*

# RESEARCH



# BRIEF OVERVIEW OF RESEARCH APPROACHES

QUALITATIVE RESEARCH	QUANTITATIVE RESEARCH
AIMS TO EXPLORE, DESCRIBE, OR INTERPRET	AIMS TO EXPLAIN OR PREDICT
AIMS TO DEVELOP A THEORY	AIMS TO CONFIRM A THEORY
INVOLVES CHARACTERISTICS, QUALITIES & COMPLEXITIES	INVOLVES NUMBERS & QUANTITIES
UNKNOWN VARIABLES	KNOWN VARIABLES
CONTEXT SPECIFIC	CONTEXT FREE (I.E., CONTROLLED ENVIRONMENT)
ALLOWS FOR MULTIPLE REALITIES/TRUTHS	SEEKS TO IDENTIFY OBJECTIVE TRUTH
SMALL SAMPLE SIZES	LARGE SAMPLE SIZES
NON-STANDARDIZED MEASURES	STANDARDIZED MEASURES
SUBJECTIVE ANALYSIS (OPEN CODING)	OBJECTIVE ANALYSIS (STATISTICS)

# BRIEF OVERVIEW OF RESEARCH APPROACHES

## MIXED METHODS RESEARCH

AIMS TO COLLECT & ANALYZE BOTH QUALITATIVE & QUANTITATIVE DATA IN THE SAME STUDY

AIMS TO EXPLORE & UNCOVER DIVERSE RELATIONSHIPS & PERSPECTIVES THAT EXIST

INVOLVES CHARACTERISTICS, QUALITIES, COMPLEXITIES, NUMBERS, & QUANTITIES

CONTAINS BOTH UNKNOWN VARIABLES & KNOWN VARIABLES

CONTAINS BOTH CONTEXT SPECIFIC & CONTEXT FREE (I.E., CONTROLLED ENVIRONMENT)

A PURPOSEFUL MIXING OF THE DATA COLLECTION, DATA ANALYSIS, AND INTERPRETATION OF DATA

SMALL OR LARGE SAMPLE SIZES

UTILIZES BOTH NON-STANDARDIZED & STANDARDIZED MEASURES

UTILIZES BOTH SUBJECTIVE ANALYSIS (OPEN CODING) & OBJECTIVE ANALYSIS (STATISTICS) IS ANALYZED TOGETHER

## MULTIMETHOD RESEARCH

AIMS TO COLLECT & ANALYZE DATA VIA MORE THAN ONE METHOD

AIMS TO EXPLORE & UNCOVER DIVERSE RELATIONSHIPS & PERSPECTIVES THAT EXIST

CAN INVOLVES CHARACTERISTICS, QUALITIES, COMPLEXITIES, NUMBERS, & QUANTITIES

CAN CONTAIN UNKNOWN VARIABLES AND /OR KNOWN VARIABLES

CAN CONTAIN CONTEXT SPECIFIC AND/OR CONTEXT FREE (I.E., CONTROLLED ENVIRONMENT)

ALLOWS FOR MULTIPLE REALITIES/TRUTHS WHILE ALSO SEEKING TO IDENTIFY OBJECTIVE TRUTH

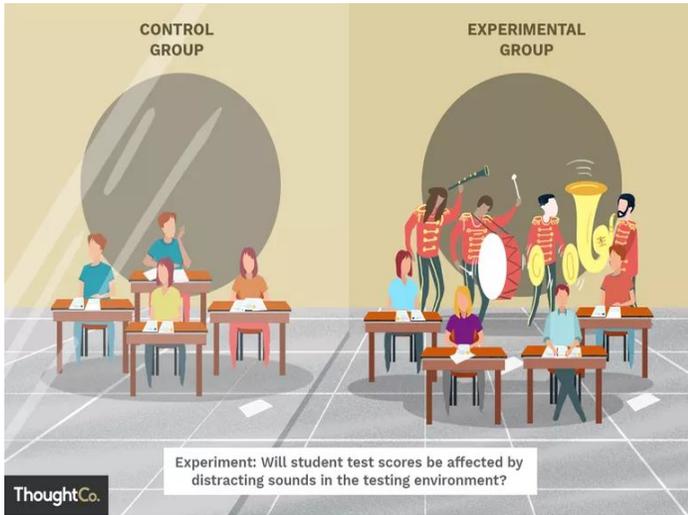
SMALL OR LARGE SAMPLE SIZES

CAN UTILIZE NON-STANDARDIZED AND/OR STANDARDIZED MEASURES

CAN UTILIZE SUBJECTIVE ANALYSIS (OPEN CODING) AND/OR OBJECTIVE ANALYSIS (STATISTICS) WHICH IS ANALYZED SEPARATELY



# QUANTITATIVE RESEARCH DESIGNS



## Experimental Design

- Is the examination of the effects of an independent variable on a dependent variable
- There's control group and a experimental group

## Non-Experimental Design

- Focuses on a single variable rather than a statistical relationship between two variables
- Researchers utilize surveys

## Longitudinal Design

- Measures the characteristics of the same individuals on at least two occasions over time
- Focuses on the individual change and variation

# MIXED METHODS RESEARCH DESIGN

## Convergent

Researchers converge or merge quantitative and qualitative data to provide a comprehensive analysis of the results

## Explanatory Sequential

Researcher 1st conducts quantitative research and analyzes the results. Then researcher conducts qualitative research to further explain the results

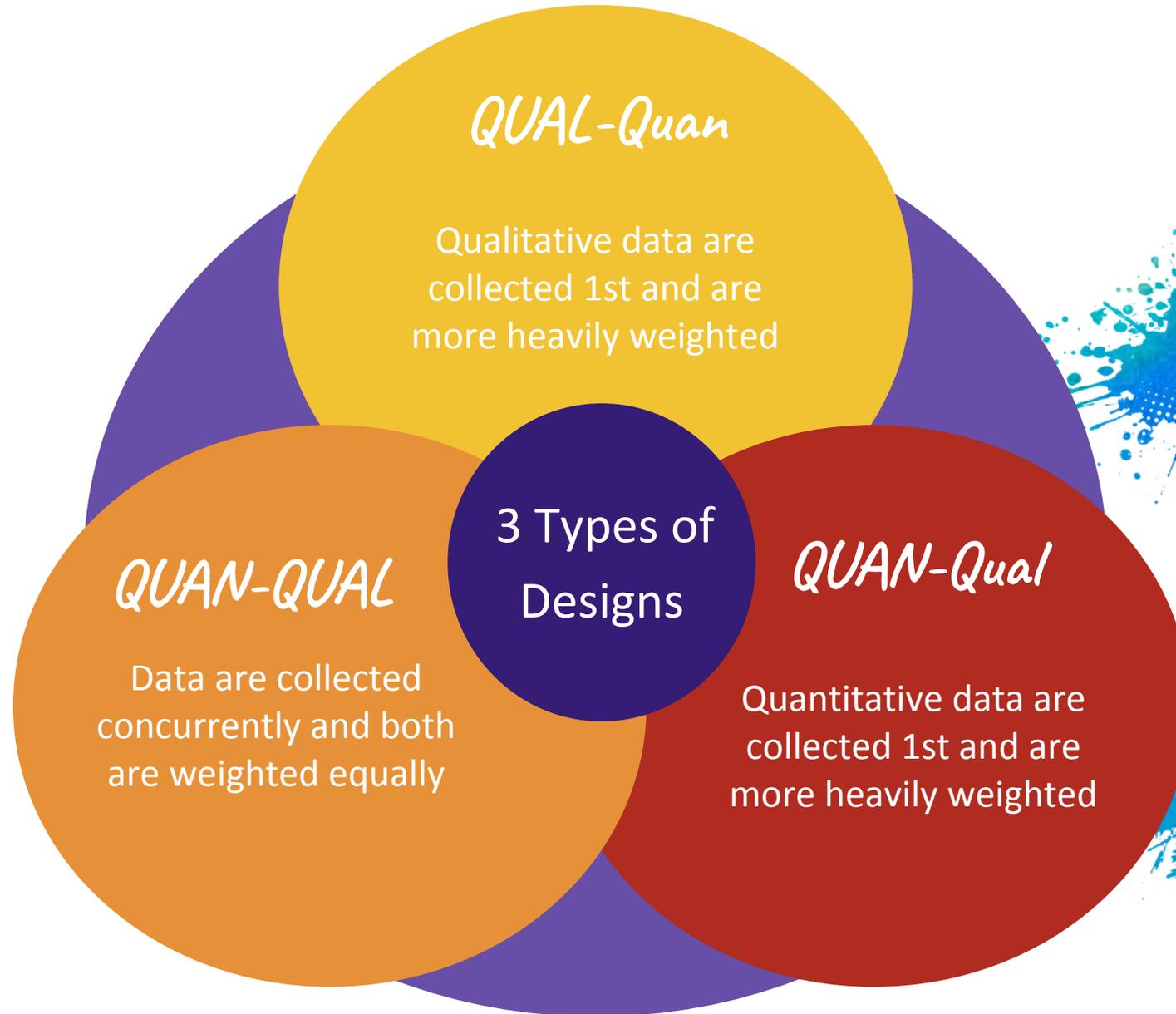
## Exploratory Sequential

Researcher 1st conducts qualitative research and analyzes the results. Then researcher conducts quantitative research to further explain the results

## Complex Designs With Embedded Core Designs

Convergent mixed methods, Explanatory sequential mixed methods, and exploratory sequential mixed methods can be used in more complex mixed methods strategies

# MULTIMETHOD RESEARCH



# BRIEF OVERVIEW OF RESEARCH METHODS

QUALITATIVE RESEARCH	QUANTITATIVE RESEARCH	MIXED METHODS RESEARCH
EMERGING METHODS	PRE-DETERMINED	BOTH PREDETERMINED & EMERGING METHODS
OPENED-ENDED QUESTIONS	INSTRUMENT BASED QUESTIONS	BOTH OPEN AND CLOSED ENDED QUESTIONS
INTERVIEW DATA, OBSERVATION DATA, DOCUMENT DATA, & AUDIOVISUAL DATA	PERFORMANCE DATA, ATTITUDE DATA, OBSERVATIONAL DATA, & CENSUS DATA	MULTIPLE FORMS OF DATA DRAWING ON ALL POSSIBILITIES
TEXT & IMAGE ANALYSIS	STATISTICAL ANALYSIS	STATISTICAL & TEXT ANALYSIS
THEMES, PATTERNS INTERPRETATION	STATISTICAL INTERPRETATION	ACROSS DATABASES INTERPRETATION



## APPLY RESULTS IN YOUR RT PRACTICE

Select, implement, and justify programs/interventions based on research. This is EBP!

7

## DETERMINE RESEARCH QUESTION

PICOT (population, intervention, comparison, outcome, time)

1

## SELECT SEARCH TERMS FOR YOUR PICOT QUESTION

Use Boolean operators, keywords, and filters.

2

## SELECT DATABASES AND JOURNALS

Peer-reviewed sources, consider access.

3

## LOOK FOR ARTICLES

Articles < than 10 years old, articles that are higher in hierarchy of research (meta-analysis, meta-synthesis and RCTs are highest level)

4

## CRITICALLY APPRAISE THE EVIDENCE

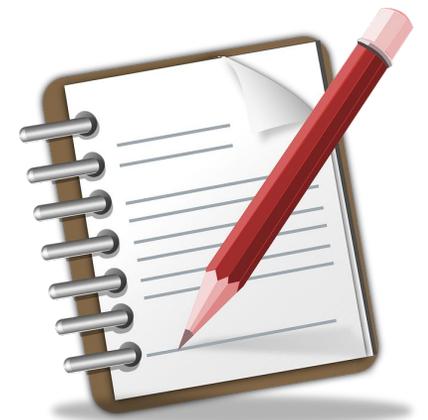
Determine quality of research

6

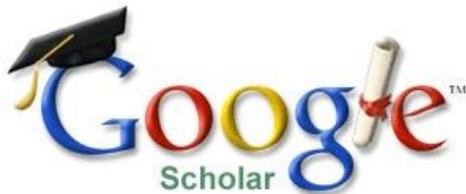
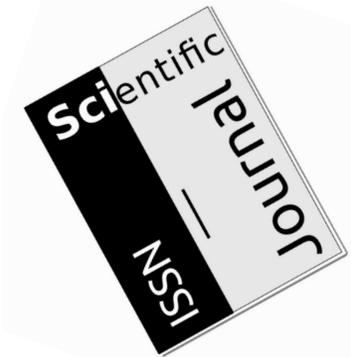
## KNOW HOW TO NAVIGATE A RESEARCH ARTICLE

Understand parts of an article

5



# LET'S PRACTICE CONSUMING RESEARCH



# DETERMINE RESEARCH QUESTION



**P**OPULATION → Disability group/diagnosis/condition  
 → Age group  
 → Other characteristics: gender, race, etc.

**I**NTERVENTION → Recreational Therapy modality/program  
 → Setting

**C**OMPARISON → Another intervention/ No intervention/ Sub-intervention

**O**UTCOME → Benefits of intervention to clients

**T**IME → Length of intervention (frequency, duration)



Question Type	Purpose	Question
Benefit	To determine if a specific intervention is beneficial for a specific population	-Is there evidence that _____ (I) improves _____ (O) among _____ (P) -What are the effects of _____ (I) among _____ (P) on _____ (O)
Intervention or therapy	To determine which treatment leads to the best outcome	-Compared to _____ (C), does _____ (I) _____ (O) among _____ (P) -Among _____ (P) how does _____ (I) compared with _____ (C) affect _____ (O) within _____ (T) -In _____ (P) how does _____ (I) compared with _____ (C) influence _____ (O) over _____ (T)
Prognosis or Prediction	To determine the clinical course over time and likely complications of condition	-What signs and symptoms do I need to be aware of when I provide _____ (I) to _____ (P) to _____ (O) for _____ (T), -What is the expected prognosis of _____ (P) when providing _____ (I) _____ to _____ (O)
Meaning	To understand the meaning of an experience for a particular individual, group or community	-How do _____ (P) perceive _____ (O) during _____ (I)?

# SELECT SEARCH TERMS FOR YOUR PICOT QUESTION

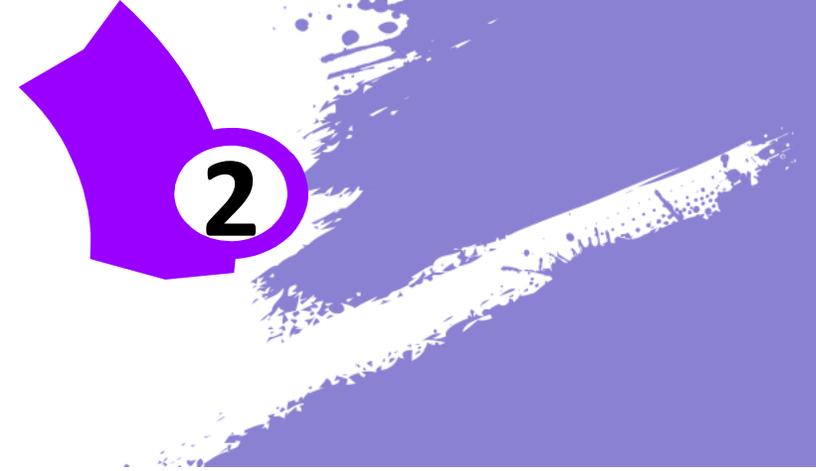


## #keywords

	Term 1	Term 2	Term 3	Other terms?
<b>Population:</b> Intellectual and developmental disability	IDD	cognitive impairment	Down syndrome ASD CP	Neurodevelopmental Disorder
<b>Intervention:</b> Sensory stimulation	Sensory intervention	Multisensory environment	Snoezelen room	Stimulating environment
<b>Comparison (this may be blank):</b>				
<b>Outcome:</b> self-stimulation	repetitive behavior	stimming	self-stimulatory behavior	stereotypical behavior



# SELECT SEARCH TERMS FOR YOUR PICOT QUESTION

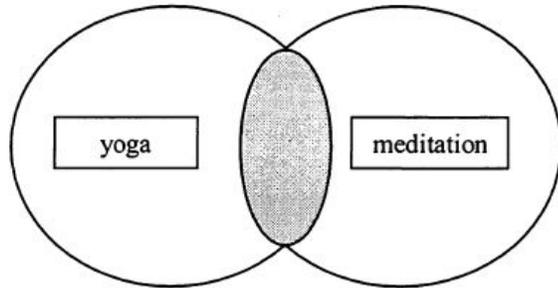


## Basic Boolean Operators

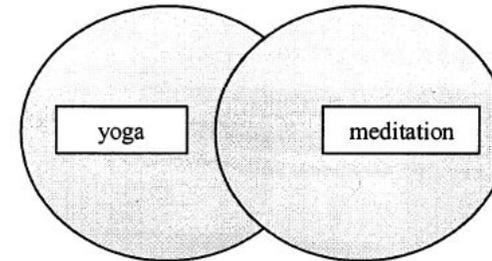
Used to combine or exclude keywords for a more focused search  
Reduces the number of items returned in a search

- “quotes” are used to search phrases (example: “recreation therapy”)
  - \* (a *wildcard*) is used to search for variations of a word stem or root (example: searching ‘child’ will not find ‘children’ so use child\* to include child and children in your search)
  - (parentheses) used to group terms joined by OR; used when AND and OR are used in a single search
- Example: “adventure therapy” OR (outdoors NOT nature) AND adhd

- AND
- narrows the search
  - requires both items to be included in order to be in the resulting list
  - you want to find articles that discuss yoga AND meditation
  - the more times AND is included to connect words, the fewer items on the resulting list



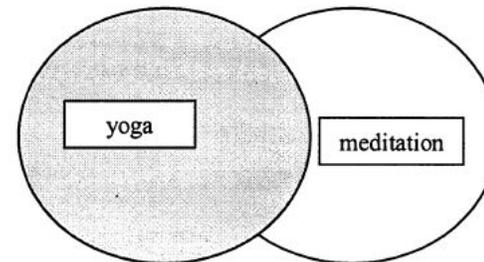
- OR
- expands the search
  - both items to be included in resulting list
  - you want to find articles that discuss yoga, articles that discuss meditation, or articles that discuss both
  - the more times OR is included to connect words, the greater number of items on the resulting list



OR means MORE



- NOT
- excludes items that follow NOT
  - useful after a search yields in too many results and you determine that there is a word or phrase that you do not want included in the search
  - you want to find articles that discuss yoga, but NOT meditation



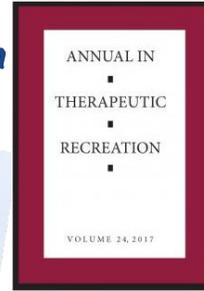
# SELECT APPROPRIATE DATABASES AND JOURNALS



A scholarly publication containing articles written by researchers.

Good journal articles:

- Are peer-reviewed.
- Are reports of original research.
- Focus on current developments.
- Cite other research to support new research.



Therapeutic  
Recreation Journal



Annual in Therapeutic  
Recreation

American Journal of  
Recreation Therapy

Recreational  
Therapy Journals

Journals or periodicals are published on a regular basis (monthly, quarterly).

Journals have volumes and issues. An issue is comprised of multiple articles. A volume is comprised of multiple issues.

# SELECT APPROPRIATE DATABASES AND JOURNALS

-Find if you have access to University Library

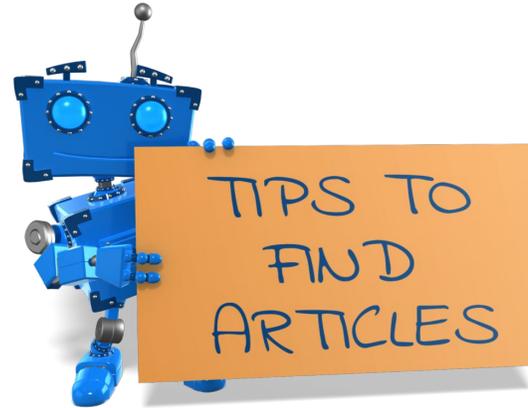
-Find if you have access to Databases through your organization

PsychInfo

Academic Search Complete

MEDLINE

ERIC



-Look for free databases and open access sources

RT Wise Owls

Google Scholar

PubMed

Public Library

**FREE**



A search engine or electronic index of published, reliable sources.



A 'place' that collects or stores multiple sources of information including books, journals and government documents.



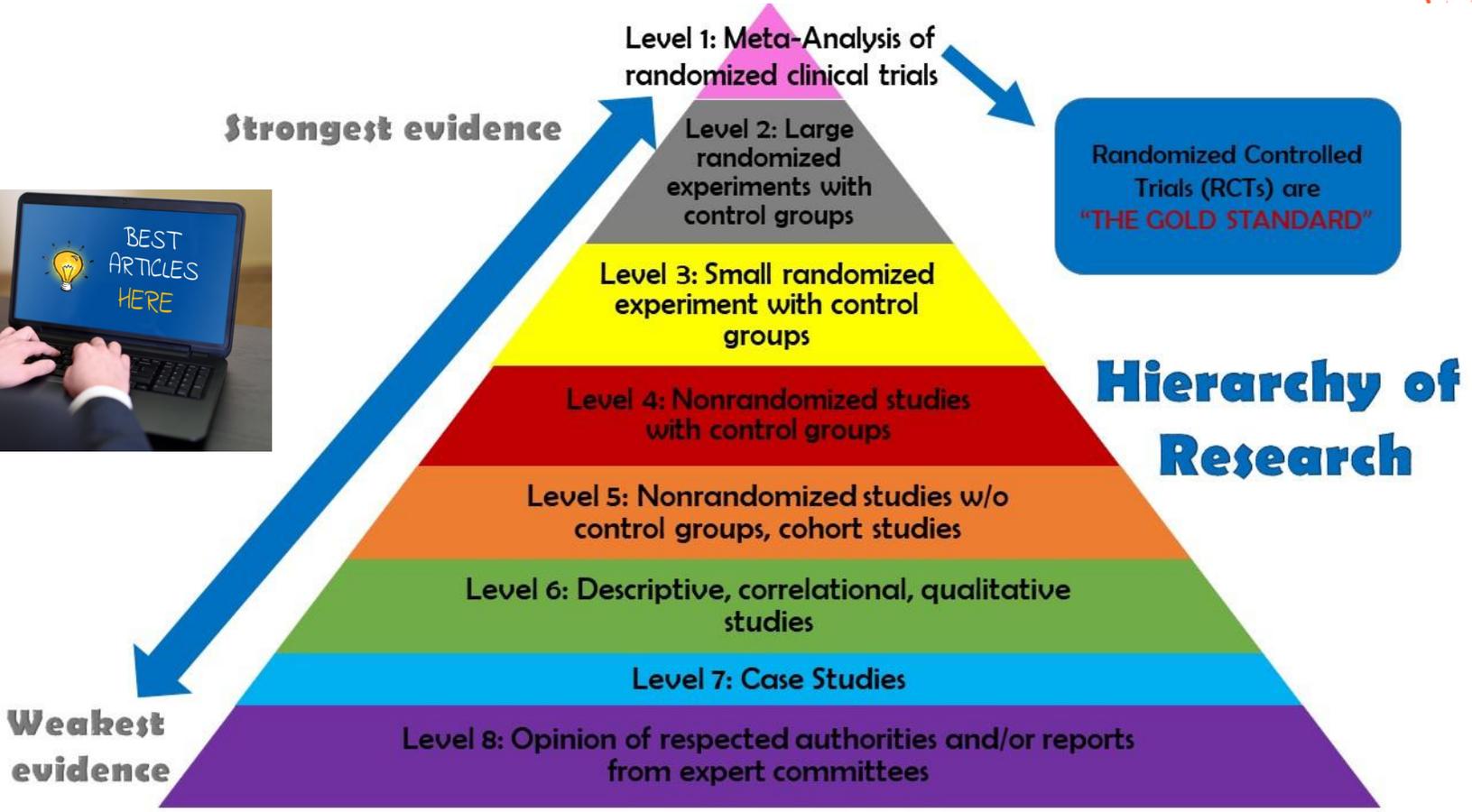
# LOOK FOR ARTICLES



-Use articles that are < than 10 years old to ensure research is not outdated.

-Stick to your research question, know what you are looking for.

-Are you wanting to answer the “what”, the “how”, or the “why”?



5

# KNOW HOW TO NAVIGATE A RESEARCH ARTICLE

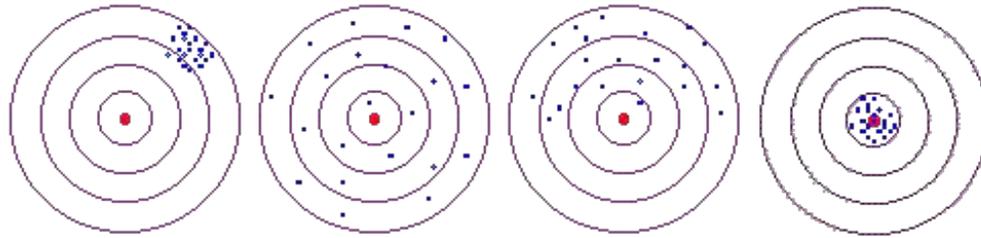
A paper that reports the results of original research, assesses its contribution to the body of knowledge in a given area, and is published in a peer-reviewed scholarly journal.

01	Abstract + Keywords	-Mini-summary of study
02	Introduction	-Context -Problem statement / research justification -Purpose of the study
03	Literature Review	-Previous related research -Can be part of Introduction -Include supporting theory if any
04	Methods	-Sampling -Research Design Tx intervention -Data collection and data analysis procedures
05	Results	-Report of findings
06	Discussion	-Interpretation of results -Implications and future research -Limitations
07	Conclusion	-Synthesis of key points -Final significance of the study
08	References	-Sources cited in the article



6

# CRITICALLY APPRAISE THE EVIDENCE



Reliable  
Not Valid

Valid  
Not Reliable

Neither Reliable  
Nor Valid

Both Reliable  
And Valid

Validity

*How sound is the research? Applies to design and methods. Extent to which research is measuring what it is intended to measure*

Reliability

*How stable and consistent are the results?  
Instrument capability to yield consistent results.*

Applicability

*How relevant is the evidence to particular situations?*

Generalization

*Can I infer broader inferences from particular observations? Extent to which the results on a sample can be transferred to the whole population*

Significance

*Are the results significant?  
Statistical significance:  $p\text{-value} < 0.5$*



7

## APPLY RESULTS IN YOUR RT PRACTICE AKA EVIDENCE-BASED PRACTICE

*Things to consider when deciding:*

- What were the outcomes/results of the research studies that I found?*
- Are the results of the articles valid, reliable, and generalizable?*
- Can I apply the results in my practice and implement a similar program in my facility?*
- Can research found help me make arguments to justify programs?*
- What resources will I need to implement a new research-based program?*
- What changes/adaptations are needed based on my local context?*



## **SUBMIT ARTICLE FOR PUBLICATION**

Submit article to *ONLY ONE* journal.  
Article will be reviewed and you will be notified if accepted for publication.

**7**

## **EXPLORATION**

Formulate a research question, then conduct a literature review of your topic

**1**

## **SELECT A RESEARCH DESIGN**

How operational is your study?  
Determine the research design (Note: the design is informed by your research question), Determine your sample

**2**

## **CONDUCT STUDY**

Complete experiment or interviews

**3**

## **ANALYZE DATA AND OBTAIN RESULTS**

Utilize a software to input quantitative or qualitative data, review results of data, describe findings

**4**

**5**

## **WRITE THE ARTICLE**

Format article to include abstract, introduction, methods, results, discussion, conclusion, & references

**6**

## **SELECT A PEER-REVIEWED JOURNAL TO SUBMIT RESEARCH**

Search & Select a Journal that your research will best fit in



*LET'S START WORKING  
ON PRODUCING  
RESEARCH*

1

## SELECT A RESEARCH DESIGN

-Choose research design based on research question

*Operationalization: Process of defining variables to be measured.*

*Variable: anything that has a quality or quantity that varies.*

2

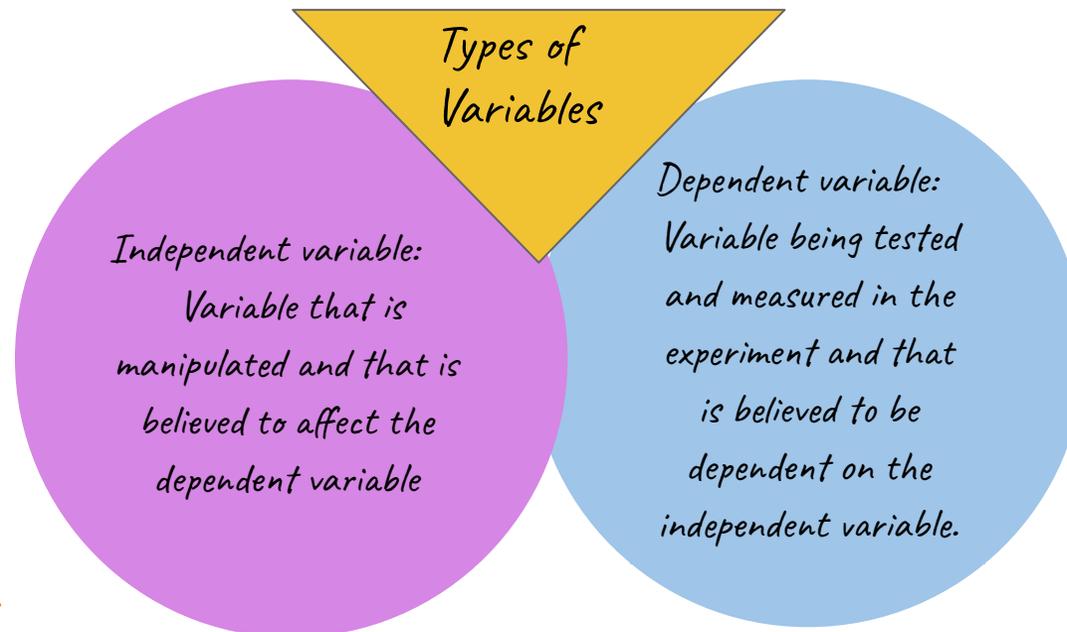
### EXPLORATION

-Remember to write PICOT research question

-Do you have programs that have yielded outcomes?

-Do you have data that can be analyzed?

-Look for research that has been published on the topic that you are interested about.





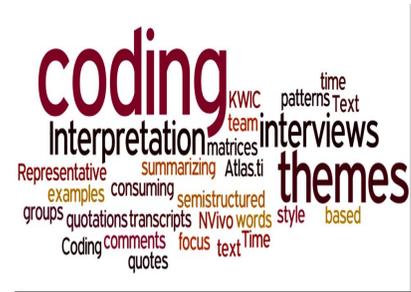
## CONDUCT STUDY

Once you've identified the subject, found the literature, defined terms and concepts, who your audience will be, and which instruments to use, THEN:

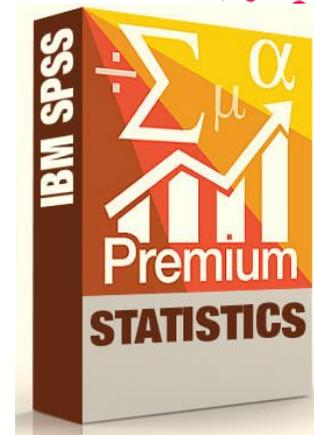
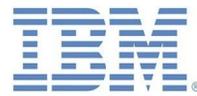
- Collect data via observations, interviews, checklists, standardized and nonstandardized assessments



## Qualitative Data



## Quantitative Data



## RESULTS

- Make sure to document outcomes of your research project in a safe place
- Store results in multiple locations to avoid losing data.

# ANALYZE DATA AND OBTAIN RESULTS

Analysis of the data depends on the research design.

# 5

## WRITE THE ARTICLE

-Format article to include abstract, introduction, methods, results, discussion, conclusion, & references

-Have in mind the journal that you want to submit your research to and format it in the proper style.



### Popular Citation Styles

And Who Uses Them!



**MLA**

English Literature  
Foreign Language  
Communications  
Religious Studies



**APA**

Psychology  
Education  
Business/Economics  
Nursing  
Linguistic Studies



**Chicago**

History  
Art  
Anthropology  
Philosophy



**AMA**

Medicine  
Allied Healthcare  
Professions

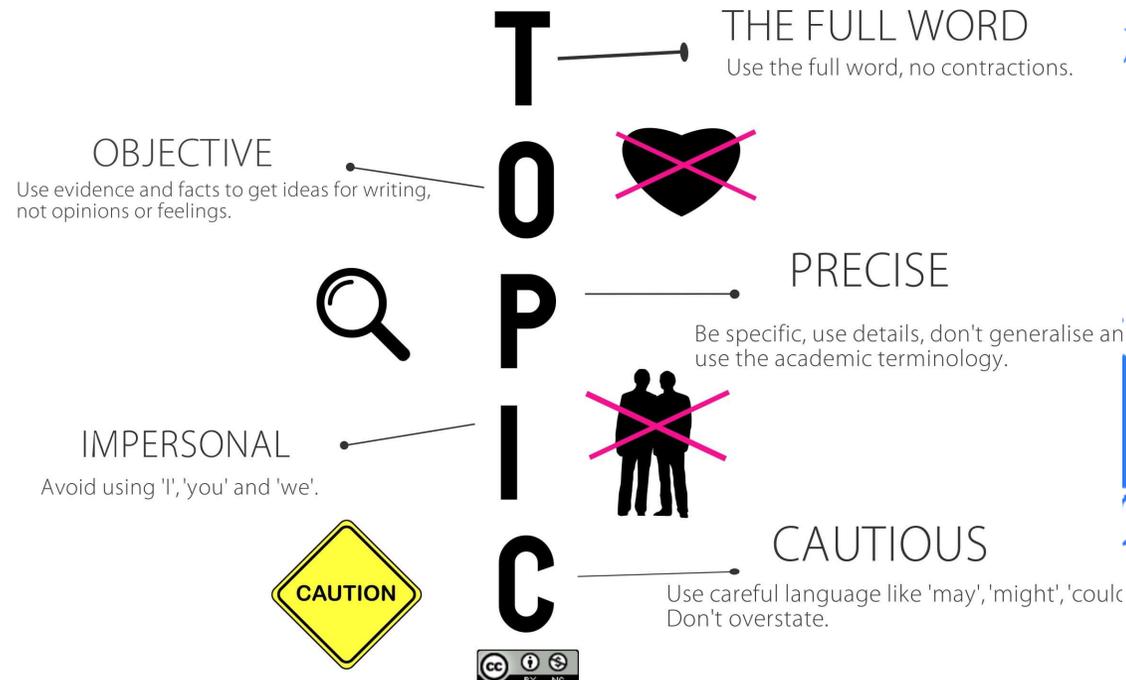


**CSE**

Biology  
Physics  
Chemistry  
Geology

Always check with your instructor about what style to use!

### Things to Consider when Engaging in Academic Writing



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## SELECT A PEER-REVIEWED JOURNAL TO SUBMIT RESEARCH ARTICLE

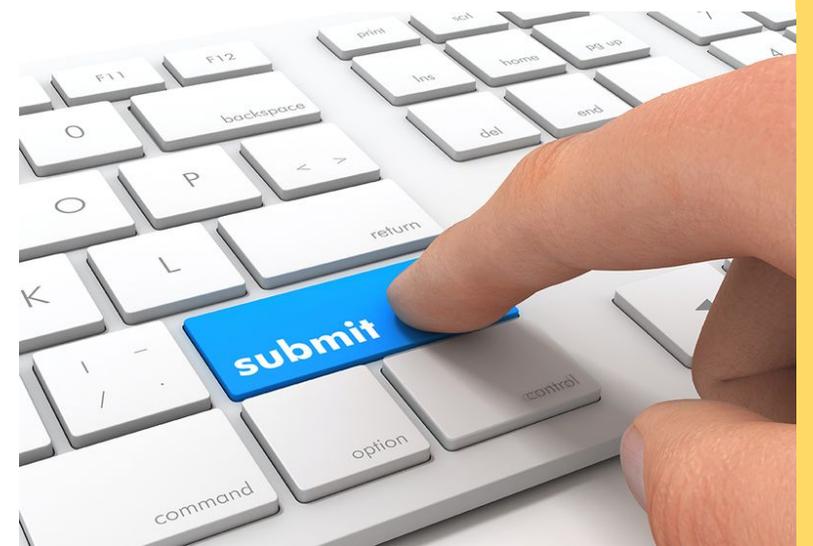
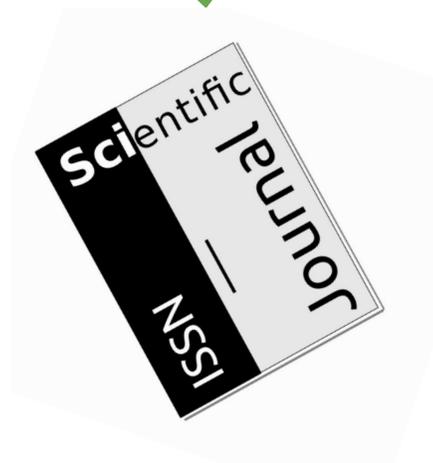
*How to Select the Most Appropriate Journal*

1. Does your article match the Journal's focus?
2. Does the Journal accept the type of research you conducted?
3. Does the Journal reach your target audience?
4. Is the Journal well known and considered prestigious?
5. What is the Journal's impact factor?
6. Is the Journal available on known Databases?
7. What is the publication frequency?
8. What is the turnaround time for decisions?
9. Is there a publication charge?
10. Is the Journal Open Access?

7

## SUBMIT ARTICLE

1. Submit your research to ONE journal only, but check if they offer transfers to other journals
2. Follow the instructions for authors carefully
3. Articles accepted for review and will be sent back for with changes before being published



# QUESTIONS?





*ALICIA POLA, MS, CTRS, CCLS  
INSTRUCTOR RECREATIONAL THERAPY, FIU*

*APOLA@FIU.EDU*

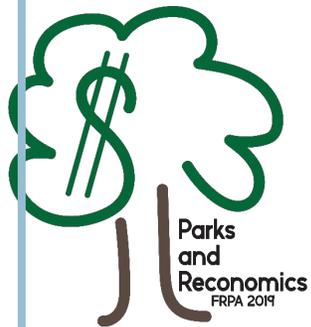
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*TANIA SANTIAGO PEREZ, MS, CTRS  
INSTRUCTOR RECREATIONAL THERAPY, FIU*

*TSANTIAG@FIU.EDU*

*305-348-3220*





**FRPA**  
**FLORIDA RECREATION  
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