DESIGN STRATEGIES FOR EFFECTIVE RESEARCH POSTERS

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EDUCATION RESOURCES
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THE *PERFECT POSTER* SERIES

Previous session: Library Resources – literature review wizardry, citation and copyright guidelines

Today includes:

- Selection of key material
- Evidence-based principles of good design
- Decisions about text and images based on the above

Final session: Information Resources - technical and graphical tips, tricks, resources, formatting, and printing

INSTRUCTIONAL DESIGN & POSTER PRESENTATIONS?

10,000 foot view of your research

- You have seconds to grab readers' attention, and
- Minutes to educate them on possibly months or years of your work.

Evidence-based design principles for posters

- Coherence Principle
- Segmenting Principle
- Multimedia Principle
- Contiguity Principle

FITTING THE CAMEL THROUGH THE EYE OF A NEEDLE

Select the key material that conveys, at first glance:

WHAT DID YOU DO?
and
WHAT DID YOU FIND?

THE SEGMENTING PRINCIPLE

Long blocks of text should be split into smaller sections

- “Learners who received segmented presentation performed better on transfer test than the learners who received a continuous presentation with identical material.”

Takeaway: present material in “bite size” chunks.

How to achieve it:

- Short sentences or phrases
- Section headings

UNplug

A mobile phone application to help track and reduce energy consumption at home

Energy&Health

Summary

Unplug is a downloadable mobile phone application that tracks the energy consumption of individual plug-in devices, as well as the whole household.

This is enabled through simple installation of individual monitoring adapters and a clip-on monitoring device next to the electricity meter.

Energy minister Malcolm Wicks explained *"cutting carbon emissions is one of the greatest challenges we face. Smart meters provide the chance for each one of us to play our part, providing better information and more accurate billing."*

Key Features

- Smart application shows real time data
- Tracks energy consumption for individual devices
- Shows device status and provides reminders
- Compares household energy use to the national target
- Provides personalised energy saving tips
- Application is supported by a website

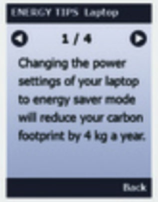
Target Users

Unplug is aimed at users aged 25 years and above, who are concerned about the environement and their own energy usage. They own a mobile phone and have internet at home.

Research by the Energy Saving Trust found that more than half of those surveyed would like to have a 'smart meter' fitted to their home.

(Metro, 17.03.08)

User need to identify their highest energy consuming devices through a simple visual representation. The level of usage is shown through different colors and device ranking.



Users are encouraged to reduce their energy use through personalised recommendations. These tips can be accessed through the main menu or the individual device list.

When leaving the house, reminders notify the user which devices have been left on or on stand by. The user has the option to ignore this message or return home to switch off appliances. Colours and icons help to make sense of this information at a quick glance.

Users have no understanding of their energy consumption, hence find it difficult to set themselves goals. The application allows them to compare their energy usage to the national target. This give users feedback about how well they are doing in reducing their consumption over time.

User Research

- Through initial surveys and interviews we were able to define our target population
- Further semi-structured interviews enabled the definitition of the user needs
- In-depth interviews allowed better understanding of the users information needs
- Lastly, user testing for interface design requirements

User Profile

Alex (31) is in a rush for an important meeting. He forgets to turn off his electrical heater. In the evening, when he returns home, he discovers he has left the heater on all day. Alex has a habit of forgetting to switch-off appliances. He wants a simple way to help him reduce his energy consumption and remind him to switch-off devices.

Luciana (56) is concerned about her household's energy usage. With 4 people in the house she is losing track of the energy consumption. She has noticed that her electricity bills have increased in the last few months. Being environmentally conscious, she would like to reduce the energy usage in her home, but she doesn't know where to start.

Future developments

- Online community
- Track gas consumption
- A remote control feature to switch off devices

Design Process

Planning

- Literature
- Soft Systems Methodology

Analysis and Requirements

- Competitor analysis
- Cost Benefit analysis
- Questionnaires and interviews
- Scenarios and personas
- Task analysis

Design

- Mobile phone design guidelines
- Ergonomic guidelines
- Low and high fidelity Prototyping

Evaluation

- Think-aloud protocol
- Semi-structured interviews
- Heuristic evaluation
- Evaluation against Scenarios
- Evaluation of conceptual fit

Innovations within investigating the motivations of Chinese international students in the UK

UNIVERSITY OF Southampton

Background

- China sends more international students worldwide than any other country
- The UK is the second most popular destination worldwide for international students; the fourth most popular for Chinese students
- One in five (almost 0.1milllion) Chinese students in the UK are from mainland China
- International student migration is the most understudied component of migration
- Chinese international student migration is important to the relationship between China and the UK

Although other researchers have investigated the motivations of Chinese internationals students studying in Western countries before, very few have used Chinese concepts to do so. Yet, it would be more appropriate to use Chinese concepts to help us understand Chinese people, rather than trying to squeeze Chinese students into western theories.

When theorising the motivations of international students, scholars tend to use either the Li and Bray's two-way push-pull theory or Bourdieu's theory of capital, yet very few use both. However, both theorisations have their benefits as well as their disadvantages. If these two concepts with their similarities were combined into a single typology, then the Li and Bray's two-way push-pull theory can have more depth and nuance, while Bourdieu's concept of capital can be enhanced by the more complete picture that Li and Bray's two-way push-pull theory provides. Thus, some of the disadvantages of each theory are compensated for.

Main aims

- Investigate what motivates Chinese international student to leave home in order to study at UK Higher Education Institutions through using the Chinese concepts face, *guanxi* and *suzhi*
- Develop a typology based on Li and Bray's two-way push-pull theory that includes distinctions between different types of Bourdieu's capital

Innovation 1: Using Chinese concepts to increase understanding of the motivations of Chinese international students

Face is one of the most fundamental concepts in Chinese culture, and originated from Ancient China. The concept of face encompasses *mianzi* (in Chinese "面子"), which refers to one's social standing in the community, and *lianzi* (in Chinese "脸子") which refers to one's moral character. A person or family can be given face through their achievements or actions that receive affirmation bestowed upon them by others. A person or a family can also lose face through their own actions or inactions (for example, failing an exam or neglecting filial duties) or the actions or inactions of someone they are associated with. If one loses *mianzi*, they feel they lose their dignity and their social respectability. If one loses *lianzi*, then they feel they have lost the trust others place in them.

Face shapes many aspects of Chinese society besides relationships, although face is indeed vital in Chinese personal and interpersonal relationships, and shapes all personal interactions. In China, the structure of interdependence within society enables the value of face to be extremely important, and consequently face plays a relatively more important role in evaluating actions and making decisions than a country that has a relatively weaker sense of interdependence like the UK, as one's actions not only affects an individual's face, but also their entire family's face. The Confucian values of filial piety and maintaining social harmony further help the concept of face to powerfully shape Chinese society.

Face is so deeply engrained in Chinese culture that almost every decision can be related to face, from buying gifts for relatives when one visits them to cheating in an exam.

Therefore, I hypothesise that the motivations of Chinese students can fundamentally shaped by face. Going to a more reputable university gains face, as it is a public sign that one's child has being well brought up. A family can gain more face through certain programmes than others; a business masters certificate looks better than a creative arts masters certificate. Some countries can give more face than others; in Chinese thinking, a degree from the UK is seen as more impressive than a degree from South Korea, so even a degree from an non-elite UK university will reflect favourably upon the student's family. Even the reasons pushing students away from China are linked to face. For example, the pressurised environment of China is a common motivation for studying outside China, and this pressure arises partly due to face; the risk of losing face pressures individuals to constantly consider the needs of those they are connected to, and be ready to help them if necessary. This leads on to the another essential Chinese concept: *guanxi*.

Guanxi (in Chinese 关系; literally "shut connections") refers to interdependent, long-term relations between two individuals or groups built on trust, mutual obligation and reciprocity. Both giving and receiving assistance is expected for all persons whom are connected by *guanxi*. Furthermore, *guanxi* permeates all areas of life: professional, social and personal.

Guanxi can be seen as a social resource that can be acquired by investment of time or money in order to obtain benefits for both individuals and groups. A key part of *guanxi* is the notion of personal interdependence and mutual reciprocity that underpins it; if two people have *guanxi* with each other, then they are both obliged to help one another. The concept of *guanxi* is fundamental to the process of forming social relationships in China, and is therefore important to understanding any group from China, including Chinese international students.

The importance of face in Chinese culture also allows *guanxi* to flourish; to not provide help for someone in your *guanxi* network when they are in need (when you are able to) will cause you and your family to lose face, as it will appear that you have not being brought up properly. If your family is seen as unreliable, it will debase your family's social standing in the community, and may cause others to break their *guanxi* with you. In a society when *guanxi* is almost essential for many situations, from acquiring a job to getting urgent medical help when needed, to lose *guanxi* is not an option. Thus, the mechanism of face shapes social interaction in Chinese society, and enables *guanxi* to be a highly desirable, powerful tool that in turn shapes all of Chinese society.

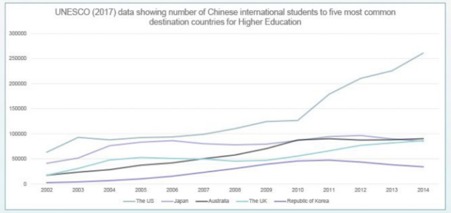
I also hypothesise *guanxi* plays a significant part in the motivations of Chinese students; parents, concerned for the child's welfare when they study abroad, will be keen to make the use of any *guanxi* connections to help make sure their child is well looked after while they are far away from home. Therefore, when a potential student is seeking which university to apply for, having a distant relative or a family friend who lives in the same city as a particular university will make that university a very attractive prospect in the eyes of the family.

Further, understanding *guanxi* will shed more light in understanding the social networks Chinese students form while they are in the UK. The social networks will have a great bearing on their overall experience of living in the UK, which will in turn affect the motivations of future students; if someone has had a positive experience studying in a particular country or city, then that is a much greater motivation to also study in that country or city. Of course, the opposite also applies.

The concept of *suzhi* (in Chinese, "素质"; literally "essence of character") refers to one's personal qualities. More specifically, *suzhi* is used to "judge the value of a human being according to his or her knowledge, skills, morality and manners". Understanding *suzhi* is important to help university staff and teachers understand Chinese international students as *suzhi* shapes what Chinese believe proper character and behaviour to look like.

Suzhi is a particularly important factor to consider in seeking to understand the motivations of Chinese students as *suzhi* is related with education; in traditional Chinese thinking, learning, wisdom and moral character are seen to be all positively associated with to each other. In contemporary China, those with high *suzhi* are seen as elite, educated, urban dwelling and sophisticated, while those with low *suzhi* are seen as uneducated, rude and rural dwelling. Thus, going to the UK to develop one's *suzhi* by acquiring skills such as presenting skills, teamwork, independent working, self-confidence and broadmindedness, thereby gaining an advantage in social and economic life, is seen as key reason to study in the UK. Therefore, the more personal skills one gains by studying and living (and potentially working) in a foreign country, the higher *suzhi* that person will attain. This also links to face; for if one attains high *suzhi*, they and their family will gain face.

In summary, I believe the concepts of face, *guanxi* and *suzhi* play vital roles in the decisions of Chinese international students to study in the UK. Further, face shapes *guanxi* and *suzhi*. Therefore, any theorisation of the motivation of Chinese international students should consider these concepts. When I use qualitative interviews to ask Chinese international students to explain how they came to the decision to study in the UK, I will pay careful attention to these concepts. Should substantial evidence be found to support my hypotheses, then I will have established a more Chinese orientated framework for understanding the motivations of Chinese international students.



Innovation 2: Developing a typology that visually summarises Li and Bray's two-way push-pull theory, while enhancing it using Bourdieu's theory of capital

The push-pull theory has been widely used to theorise international migration, and subsequently international student migration. This theory is based on the idea that the reasons people migrate abroad consist of push reasons (negative factors about the environment of their own country such as lack of availability or unfavourable political environment) and pull reasons (perceived positive factors of the country they are moving to such as availability of a desired resource). Li and Bray (2007) are also accredited for broadening this concept to include reverse push factors (such as desiring not be parted from one's family and friends) and reverse pull factors (such as higher costs of living). Li and Bray's two-way push-pull theory therefore is useful for achieving a broad understanding the decisions of international students to study abroad, because it encompasses both advantages and disadvantages as well as reasons concerning both the source country and the destination country.

Bourdieu's theory of capital is also widely used in studies about the motivations of international students. Bourdieu believed that the basis of the decision-making process is to gain "capital". The more capital one has, the more choice and power they can use. Capital can take many forms. For example, money, property or assets can be considered as economic capital, social networks can be considered as social capital, a degree from a reputable university can be considered a institutionalised cultural capital, and personal skills can be seen as embodied cultural capital. The key premise to the theory is that in order to gain more power and overall capital, individuals and groups convert one form of capital into another. For example, parents may invest lots of economic capital into sending their child to study abroad, which then enables the child to gain institutionalised culture capital, embodied cultural capital and social capital. Later on, these other forms of capital can help their child obtain a good job, thus the child converts their cultural and social capital back into economic capital.

However, very few have thought about combing these two theories. Therefore, using the common push, pull, reverse push and reverse pull factors other researchers found significant to the decision of Chinese students to study abroad, I decided to combine them all into a single table, so that it can be visualised more clearly. Then, using Bourdieu's theory of capital, I divided the push, pull, reverse push and reverse pull factors into four categories that corresponded to the different forms of Bourdieu's capital (institutionalised cultural and embodied cultural, social and economic). Given Bourdieu's emphasis on convertibility of capital and how each form of capital is connected to the others, this typology adds an extra layer of depth to Li and Bray's push-pull theory model, while combines the complex advantages and disadvantages to the decision to study aboard into a single table.

This typology is displayed in the table below. Blue represents reasons connected with gaining or sacrificing institutionalised cultural capital, purple represents reasons connected with embodied cultural capital, red represents social capital reasons, while green represents profits or costs in economic capital.

	Reasons to go to the UK	Reasons to stay in China
Reasons connected with home country (China)	• Lack of HE accessibility • Pressures of life environment	• More relevant degree programmes • Closer to family • Better social life • Low employability prospects abroad
Reasons connected with host country (UK)	• Reputation of HE quality • More choice of degree programme • Short duration of postgraduate programmes • Intercultural environment and skills • Ability to travel in the UK and Europe • Experience foreign teaching styles • Acquire "foreign" skills such as critical thinking • Improve English ability • Building social and professional networks • Friends and family living in the UK • Increases prospects of working abroad or in an international environment • Favourable exchange rate • Future employability prospects	• Uncertainties with visa approval • Lack of actual intercultural experience at most UK universities • Linguistic challenges • Unfamiliar teaching styles • UK food • Fears of security (terrorism) • Stress and loneliness • High tuition fees • High living costs • Restrictive immigration policies (hard to find work afterwards)

Next steps

I will use qualitative interviews to collect data from Chinese international students about their motivations to study in the UK, as well as their experiences. After using coding techniques to analyse the data, I will see if the responses fit with my innovative theorisation and my innovative typology.

If the Chinese concepts of face, *guanxi* and *suzhi* shape the motivations of the Chinese students in my fieldwork, then perhaps my theorisation is a helpful way to understand Chinese students, which will help inform university policy.

If the reasons Chinese students give for why they chose to study in the UK can be summarised onto a table similar to the one above, then my typology can be seen as clear and concise way for other scholars to visualise micro-level factors within the rapidly growing field of international student mobility.

Key references

Chinese student mobility data is from UNESCO website (http://data.uis.unesco.org/) Last accessed: 29/11/2017

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UNIVERSITY OF Southampton | SC.DTP South Coast Doctoral Training Partnership | E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

ESRC Final Year Conference 8th December 2017

Supervised by: Jane Falkingham, Pauline Leonard and David Clifford

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THE COHERENCE PRINCIPLE

Extraneous words and images hurt learning, regardless of good intentions

- "Students who received [new information] without [extra, interesting details] performed better on transfer test than students who received [new information] with [extra, interesting details], generating about 34% more solutions on the transfer test, which translated to an effect size of .66."
- "Students… spent less time reading the relevant text, recalled less of the relevant text, and showed shallower processing on an essay task as compared to students who read the … passage without seductive details."

What happens if you don't do it right?

- Readers focus on the wrong things
- Readers misinterpret the importance of the key pieces

Even if it IS related, avoid

- Expansion on key ideas
- Too much technical depth
- Interesting or seductive detail

THE COHERENCE PRINCIPLE

Takeaway: Just the facts; roadmap to your research

How achieve it

- Stop detail at key ideas
- Ensure graphics are directly related to key ideas, but NOT redundant
- Refer to graphics using the same terminology as used in the graphic

Motivation

- Build a learning tool for people who to want to learn to program.
- Build a tool that supports different learning styles. (Assessments, tutorials, visualizations, etc.)
- Enable minimally supervised learning through automated feedback.
- Build a system that guides students through course materials and problems smoothly.

Materials available from database

Deployed and Accessible

- Code interpretation
- Pseudo code
- Animation
- Hints

- Coding questions
- Common assessment questions
- Tailored Hints

Project Goals

- Clean and easy to use system.
- Assist students in learning core MATLAB programming concepts such as loops and decision structures.
- Online platform that is accessible to anyone.
- Content creation that allows for teaching of multiple engineering disciplines
- Unsupervised learning though automated feedback

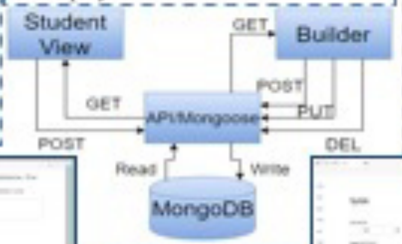
- Allow flexibility to rearrange lectures based on specific course.
- Create a clean and easy to use system.
- Provides modules for multiple learning styles.
- Allow students to access resources all in one page for ease of use.
- Create randomized questions.

Design

Navigation Bar (Homework's, Exercise videos, Tutorial walkthroughs)

Student View fetches data from database and display it contents on view

Admin panel build student page views with existing modules



Student View

- Admin panel builds course content (right)
- Student View fetches answers through Restful API (left)
- Supports more than 200 concurrent users

Admin Panel

Modules

Tutorials

- Pseudo code walk through with real-time MATLAB code feedback

- Conceptual animation with practical examples tailored to course lecture

- Code walkthrough with step by step validation

Course Materials

- Lecture video specific to current chapter

- Videos tailored to exercises problems

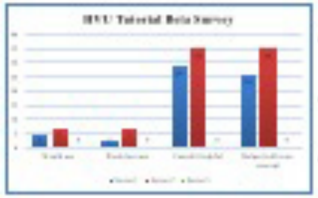
- Entire chapter is available at any given time

Results

Over 500 commits

New features are developed on separate branches

Uses issues to keep track of current bugs



- 82% of the students found this helpful
- 74% found it helpful to learn core concepts
- 71% would use this system again

Broader Impacts

- Encourage self learning through automated feedbacks
- Supports various learning styles
- Encouraging diversity in engineering fields

"I wish we had this when I was taking the class" – Beta user

Glossary

- **API:** Application Program Interface
- **REST:** Representational State Transfer
- **Student View:** User view
- **Admin Panel:** Toolbox to Build Lectures and Assessment
- **MongoDB:** Database
- **Express:** Web Framework
- **Angular:** Web Framework
- **Node JS:** JavaScript Runtime Environment
- **CS:** Computer Science

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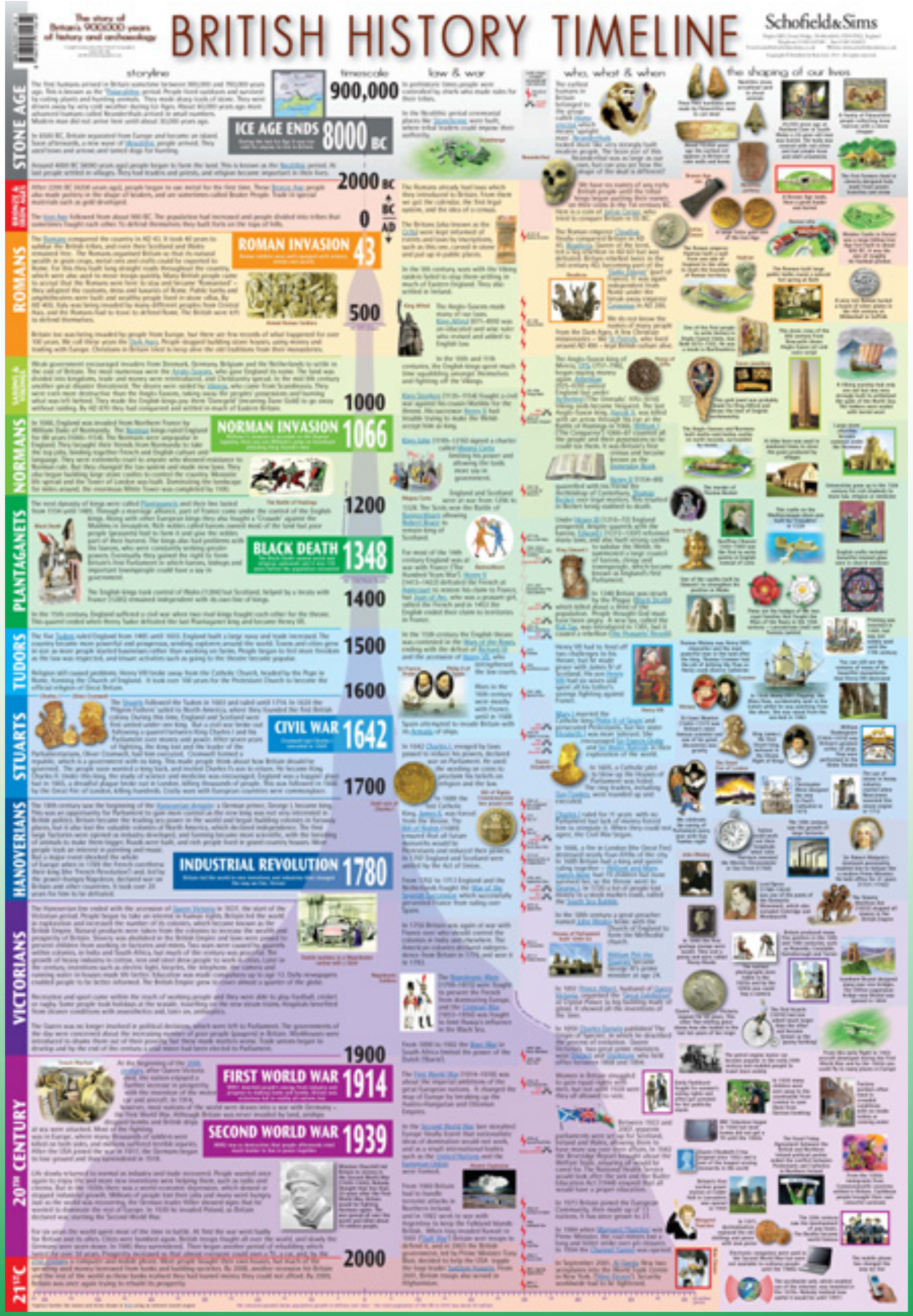
Thank you everyone who helped us get to this point. We owe it to you.

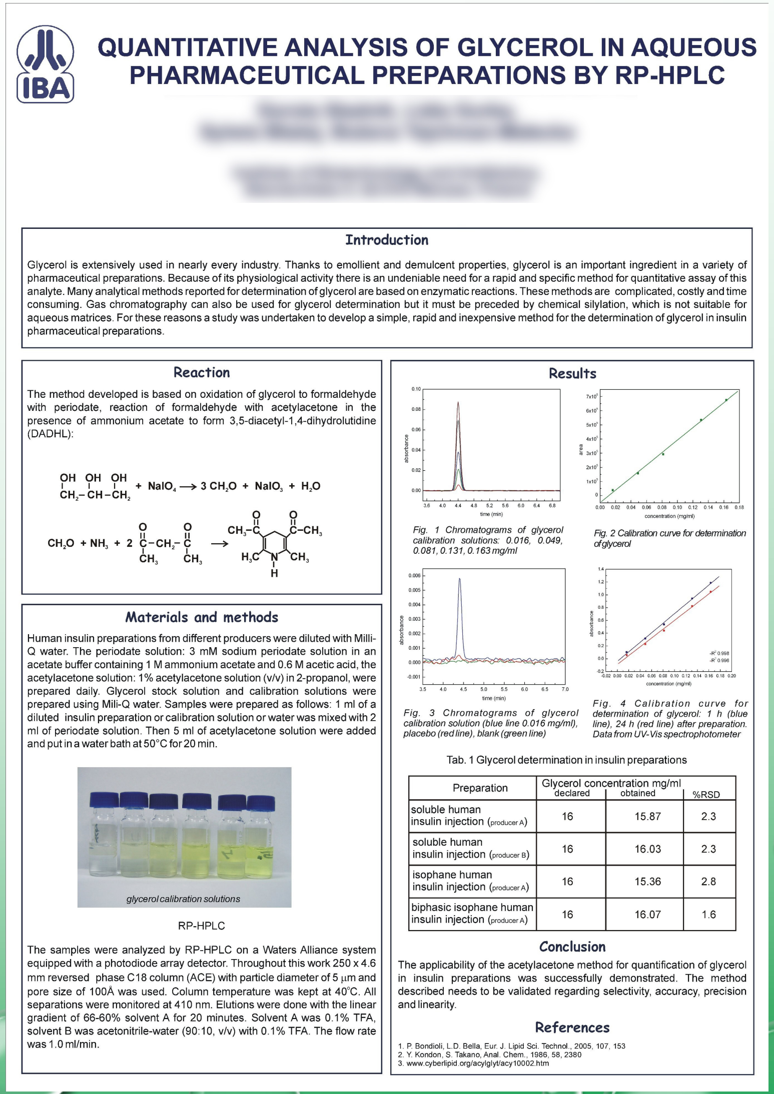
Team Greyjoy


BRITISH HISTORY TIMELINE
Schofield&Sims
storyline
timescale
law & war
who, what & when
the shaping of our lives
STONE AGE
900,000
ICE AGE ENDS 8000 BC
2000 BC
0
ROMANS
ROMAN INVASION 43
500
1000
NORMANS
NORMAN INVASION 1066
1200
PLANTAGENETS
BLACK DEATH 1348
1400
TUDORS
1500
1600
STUARTS
CIVIL WAR 1642
1700
HANOVERIANS
INDUSTRIAL REVOLUTION 1780
VICTORIANS
1900
20TH CENTURY
FIRST WORLD WAR 1914
SECOND WORLD WAR 1939
2000
21ST C

PUTTING PRINCIPLES INTO PRACTICE

Use headings wisely to employ segmenting

- Introduction
- Goals, outcomes, objectives
- Methods, procedures, materials
- Results, findings
- Discussion, conclusion, takeaways
- Acknowledgements, references



IBA

QUANTITATIVE ANALYSIS OF GLYCEROL IN AQUEOUS PHARMACEUTICAL PREPARATIONS BY RP-HPLC

Introduction

Glycerol is extensively used in nearly every industry. Thanks to emollient and demulcent properties, glycerol is an important ingredient in a variety of pharmaceutical preparations. Because of its physiological activity there is an undeniable need for a rapid and specific method for quantitative assay of this analyte. Many analytical methods reported for determination of glycerol are based on enzymatic reactions. These methods are complicated, costly and time consuming. Gas chromatography can also be used for glycerol determination but it must be preceded by chemical silylation, which is not suitable for aqueous matrices. For these reasons a study was undertaken to develop a simple, rapid and inexpensive method for the determination of glycerol in insulin pharmaceutical preparations.

Reaction

The method developed is based on oxidation of glycerol to formaldehyde with periodate, reaction of formaldehyde with acetylacetone in the presence of ammonium acetate to form 3,5-diacetyl-1,4-dihydrolutidine (DADHL):

$$CH_2(OH){-}CH(OH){-}CH_2(OH) + NaIO_4 \longrightarrow 3\,CH_2O + NaIO_3 + H_2O$$

$$CH_2O + NH_3 + 2\,CH_3{-}CO{-}CH_2{-}CO{-}CH_3 \longrightarrow \text{DADHL}$$

Materials and methods

Human insulin preparations from different producers were diluted with Milli-Q water. The periodate solution: 3 mM sodium periodate solution in an acetate buffer containing 1 M ammonium acetate and 0.6 M acetic acid, the acetylacetone solution: 1% acetylacetone solution (v/v) in 2-propanol, were prepared daily. Glycerol stock solution and calibration solutions were prepared using Mili-Q water. Samples were prepared as follows: 1 ml of a diluted insulin preparation or calibration solution or water was mixed with 2 ml of periodate solution. Then 5 ml of acetylacetone solution were added and put in a water bath at 50°C for 20 min.

glycerol calibration solutions

RP-HPLC

The samples were analyzed by RP-HPLC on a Waters Alliance system equipped with a photodiode array detector. Throughout this work 250 x 4.6 mm reversed phase C18 column (ACE) with particle diameter of 5 μm and pore size of 100Å was used. Column temperature was kept at 40°C. All separations were monitored at 410 nm. Elutions were done with the linear gradient of 66-60% solvent A for 20 minutes. Solvent A was 0.1% TFA, solvent B was acetonitrile-water (90:10, v/v) with 0.1% TFA. The flow rate was 1.0 ml/min.

Results

Fig. 1 Chromatograms of glycerol calibration solutions: 0.016, 0.049, 0.081, 0.131, 0.163 mg/ml

Fig. 2 Calibration curve for determination of glycerol

Fig. 3 Chromatograms of glycerol calibration solution (blue line 0.016 mg/ml), placebo (red line), blank (green line)

Fig. 4 Calibration curve for determination of glycerol: 1 h (blue line), 24 h (red line) after preparation. Data from UV-Vis spectrophotometer

Tab. 1 Glycerol determination in insulin preparations

Preparation	Glycerol concentration mg/ml declared	obtained	%RSD
soluble human insulin injection (producer A)	16	15.87	2.3
soluble human insulin injection (producer B)	16	16.03	2.3
isophane human insulin injection (producer A)	16	15.36	2.8
biphasic isophane human insulin injection (producer A)	16	16.07	1.6

Conclusion

The applicability of the acetylacetone method for quantification of glycerol in insulin preparations was successfully demonstrated. The method described needs to be validated regarding selectivity, accuracy, precision and linearity.

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2. Y. Kondon, S. Takano, Anal. Chem., 1986, 58, 2380
3. www.cyberlipid.org/acylglyt/acy10002.htm

KEY MATERIAL

INTRODUCTION or BACKGROUND

GOALS and OUTCOMES

METHODS or PROCEDURES

RESULTS

DISCUSSION or CONCLUSIONS

THANKS and REFERENCES

INTRODUCTION

NOT an abstract; sets the context

Coherence

- 1–2 short paragraphs; total of 5–8 sentences
- Provide context–why does it matter, and to whom?
- Provide evidence for the problem
- State the need for a solution

INTRODUCTION EXAMPLES

PROBLEM

Emergency treatment for anaphylaxis with the use of epinephrine injector systems was identified as a new curricular need at the University of North Dakota School of Medicine and Health Sciences. Incorporating new instructional objectives to a medical curriculum is is a frequent activity but is often challenging because of scheduling and time constraints.[(1)] Typical solutions "make room" in the curriculum for new lectures, yet not all learning outcomes are rarely analyzed to determine whether synchronous instruction is required (as with attitudes and motor skills do, for example)[(2)] or not (as with intellectual skills, which usually do not), resulting in inefficient use of student and faculty time. [(3)]

SOLUTION

Rather than creating a new lecture, the instructional design team advocated for asynchronous e-learning. Because motor skills can only be approximated in eLearning simulations, the module is supplemented with final motor skills assessment during objective structured clinical examinations (OSCE). If students successfully demonstrate the motor skills involved in administering an epinephrine auto-injector, future iterations may not require testing during OSCE, thus saving additional time. Most students can complete the module in 30 minutes; the OSCE is anticipated to take less than one minute.

INTRODUCTION

Emergency treatment for anaphylaxis with the use of epinephrine injector systems was identified as a new curricular need at the University of North Dakota School of Medicine and Health Sciences. Incorporating new instructional objectives to a medical curriculum is is a frequent activity but is often challenging because of scheduling and time constraints.[(1)] Typical solutions "make room" in the curriculum for new lectures, yet not all learning outcomes are rarely analyzed to determine whether synchronous instruction is required (as with attitudes and motor skills do, for example)[(2)] or not (as with intellectual skills, which usually do not), resulting in inefficient use of student and faculty time. [(3)] Instructional analysis revealed that most required skills could be taught asynchronously. Incorporating new instructional objectives to a medical curriculum is essential but often challenging because of scheduling and time constraints.(1) Typical solutions "make room" in the curriculum for new lectures, yet not all learning outcomes require synchronous instruction[(2)] (e.g., attitudes and motor skills do; intellectual skills do not).[(3)] Asynchronous e-learning can deliver new curriculum while minimizing disruption, yet aligning outcomes with asynchronous modalities requires skill, as does the design, development, and evaluation of e-learning itself. Instructional design can help with these challenges.(4) Emergency treatment for anaphylaxis with the use of epinephrine injector systems ("EpiPens") was identified as a new curricular need at the University of North Dakota School of Medicine and Health Sciences. Rather than creating a new lecture, the instructional design team advocated for asynchronous e-learning designed using the ADDIE framework.[5].

KEY MATERIAL

INTRODUCTION or BACKGROUND

GOALS and OUTCOMES

METHODS or PROCEDURES

RESULTS

DISCUSSION or CONCLUSIONS

THANKS and REFERENCES

GOALS AND OUTCOMES

One of the first places readers will look!

Coherence:

- State the goals, objectives, intended outcomes, or hypotheses
- Use phrases, not sentences
- Use bullets, not phrases
    - Key ideas, not substitutes for paragraphs
    - Third level indent is off limits!
        - Why? It is too hard to read AND is likely extraneous

GOALS AND OUTCOMES EXAMPLES

OBJECTIVES

This module addresses four terminal objectives and fifteen enabling objectives, each aligned with appropriate strategies and the events of instruction through the use of cases, examples, interactive practice, and assessment. The first objective was: Given simulated patients with and without anaphylactic shock, the learner will be able to classify cases of anaphylactic shock or not anaphylactic shock by labeling or selecting cases with 100% accuracy. Seven enabling objectives support identification and classification of the signs and symptoms of anaphylaxis versus similar conditions. These include cutaneous, respiratory, gastrointestinal, neurological, and cardiovascular distress. The second objective was: Given a real or simulated patient, the learner will be able to demonstrate asking pertinent questions to determine whether a person may be in anaphylactic shock by selecting or asking questions and doing so in the correct order with 100% accuracy. Two enabling objectives support discrimination between the ability of the patient to speak and which questions are necessary to ask. The next one we developed was: Given a real or simulated patient, the learner will be able to demonstrate asking pertinent questions to determine whether a person may be in anaphylactic shock by selecting or asking questions and doing so in the correct order with 100% accuracy. Two enabling objectives support discrimination between the ability of the patient to speak and which questions are necessary to ask. Objective #4 addressed treatment: Given a real or simulated patient, the learner will be able to apply knowledge of anaphylaxis symptoms and progression in order to begin appropriate, immediate treatment of the patient with 100% accuracy. Two enabling objectives support the identification and description of the progression of anaphylactic shock, including the timeframe from start to finish. And lastly, number 5: Given a real or simulated EpiPen, the learner will be able to demonstrate appropriate handling, pin removal, positioning, and execution for the treatment of anaphylaxis with 100% accuracy. Six enabling objectives support the demonstration of epinephrine injector system use, including appropriate grip, identification and manipulation of key components, and administration to the patient

OBJECTIVES:

1. Classify cases of anaphylactic shock or not anaphylactic shock.
2. Demonstrate asking pertinent questions to determine whether a person may be in anaphylactic shock.
3. Apply knowledge of anaphylaxis symptoms and progression in order to begin appropriate, immediate treatment of the patient.
4. Demonstrate appropriate handling, pin removal, positioning, and execution for the treatment of anaphylaxis.

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METHODS OR PROCEDURES

5,000 foot view of your study

- Journals: reader should be able to replicate your study
- Posters: reader should grasp the outline of what you did

Segmenting

- Second-level subheadings
  - Participants
  - Materials/instruments
  - Procedures
  - Analysis
  - You don’t need every detail (interested parties will ask!)

A relevant graphic

- Chart of participants; image or table of instrument

Transforming NIH Academic Trial Culture

Perelman School of Medicine UNIVERSITY of PENNSYLVANIA

Impact of Race on Attrition of Women Faculty at a Research-Oriented Medical School

FOCUS ON HEALTH & LEADERSHIP FOR WOMEN

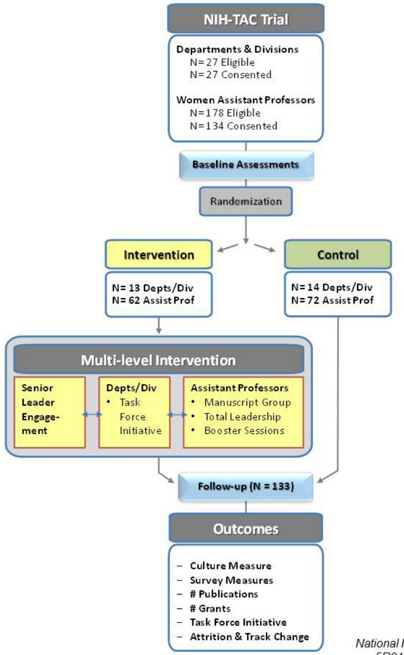
[illegible]

The NIH-TAC Trial

Overview: A cluster-randomized trial of a 3 year intervention at the Perelman School of Medicine to enhance the institutional culture, increase academic productivity, and improve job satisfaction for women assistant professors

A multi-faceted intervention targeted 3 critical levels

- **Senior Leadership** provided oversight and input
- **Department/Division Task Forces** provided customized, local interventions to target unit-specific needs
- **Women Assistant Professors** participated in: Total Leadership & Manuscript Writing Workshops



National Institutes of Health
5R01 NS069793-04

Study Aims

Background: In senior academic ranks and leadership positions, the representation of women falls short of their male counterparts. Little attention has been paid to the fact that under-represented minority (URM) women experience additional bias or "double jeopardy" associated with *both* their race and gender. It is important to understand factors associated with the career trajectories of women assistant professors.

Purpose: To identify factors associated with attrition among women faculty at an elite school of medicine over a three year period

Methods

- Departments/divisions with at least three women assistant professors (N = 27 depts/divs) were randomly assigned to intervention versus control groups
- Baseline (2010) and follow up (2013) data were obtained by questionnaire from 133 women assistant professors
- Baseline (2010) measures included: Age, marital & parental status, race, core self-evaluations, work hours
- Follow-Up (2013) measures included departure from institution

Table 1. Participant Characteristics by Race (N = 131)

	URM N= 15 11.5%	White N= 79 60.3%	Asian N= 37 28.2%	*p*
Left Institution[a]	6 (40.0)	9 (11.4)	6 (16.2)	0.02
Unmarried[a]	2 (13.3)	13 (16.5)	5 (13.5)	0.90
At least 1 Child at Home[a]	11 (73.3)	62 (78.5)	25 (67.6)	0.45
Track[a]				0.55
Clinician Educator	13 (86.7)	54 (68.4)	25 (67.6)	
Research	2 (13.3)	13 (16.5)	6 (16.2)	
Tenure	0 (0)	12 (15.2)	6 (16.2)	
Part time[a]	1 (6.7)	4 (5.1)	1 (2.7)	0.84
Time as Asst. Prof.[a]				0.25
< 3 Years	5 (33.3)	36 (45.6)	18 (48.7)	
3-6 Years	8 (53.3)	23 (29.1)	8 (21.6)	
>6 years	2 (13.3)	20 (25.3)	11 (29.7)	
Age [b]	40.5 (1.37)	41.06 (.58)	40.97 (.88)	0.91
Work Hours [b]	56.00 (2.45)	59.13 (1.10)	61.33 (1.61)	0.28
Core Self-evaluations [b,c]	3.43 (.14)	3.45 (.06)	3.29 (0.90)	0.34

N = 131 P-value based on one-way ANOVA.
[a] Number (Percentage) [b] Mean (SD)
[c] Scale of 12 items rated on a 5-point scale from 1 (Strongly Disagree) to 5 (Strongly Agree)

Analyses

A generalized linear multivariable model was employed to estimate the risk of attrition

- Generalized estimating equations accounted for clustering by departments/divisions
- Analyses controlled for years in rank, a confounding variable
- Risk factors include race, marital status and core self-evaluation (CSE)

Summary Results

Over a period of 3 years:

21 women (16% of the cohort) left the institution

- URM women were > 3x more likely to leave than White women
- Unmarried women were 3x more likely to leave than married women
- Women with higher core self-evaluations were less likely to leave
- There was no difference in attrition between the intervention and control groups

Table 2. Risk Factors Associated with Attrition[a]

	Risk Ratio(95% CI)	*p*
Race (White = Comparison)		
URM	3.30 (1.38 – 7.91)	0.007
Asian	1.67 (0.75 – 3.74)	0.210
Marital Status (Married = Comparison)		
Unmarried	3.03 (1.24 – 7.37)	0.015
Core Self-Evaluations[b]	0.43 (0.22 – 0.86)	0.017
Time as Asst. Prof. (<3 Years = Comparison)		
3-6 Years	1.30 (0.51 – 3.28)	0.580
>6 Years	0.15 (0.02 – 1.28)	0.083

[a] Generalized linear multivariable model estimating the risk of attrition using generalized estimating equations to account for the clustering by departments/divisions.
[b] Scale of 12 items rated on a 5-point scale from 1 (Strongly Disagree) to 5 (Strongly Agree)

Conclusions

During a 3-year longitudinal study, 16% of women assistant professors left the university. URM women were greater than three times more likely than White women to leave their faculty positions at a research-oriented medical institution. While unmarried women and those with less positive core self-evaluation were also more likely to leave, these results were independent of the race effects. Understanding the intersection been gender and race on the retention and advancement of women faculty is critical to developing, implementing, and evaluating strategies to increase diversity.

Background

- China sends more international students worldwide than any other country
- The UK is the second most popular destination worldwide for international students; the fourth most popular for Chinese students
- One in five (almost 0.1milllion) Chinese students in the UK are from mainland China
- International student migration is the most understudied component of migration
- Chinese international student migration is important to the relationship between China and the UK

Although other researchers have investigated the motivations of Chinese internationals students studying in Western countries before, very few have used Chinese concepts to do so. Yet, it would be more appropriate to use Chinese concepts to help us understand Chinese people, rather than trying to squeeze Chinese students into western theories.

When theorising the motivations of international students, scholars tend to use either the Li and Bray's two-way push-pull theory or Bourdieu's theory of capital, yet very few use both. However, both theorisations have their benefits as well as their disadvantages. If these two concepts with their similarities were combined into a single typology, then the Li and Bray's two-way push-pull theory can have more depth and nuance, while Bourdieu's concept of capital can be enhanced by the more complete picture that Li and Bray's two-way push-pull theory provides. Thus, some of the disadvantages of each theory are compensated for.

Main aims

- Investigate what motivates Chinese international student to leave home in order to study at UK Higher Education Institutions through using the Chinese concepts face, *guanxi* and *suzhi*

- Develop a typology based on Li and Bray's two-way push-pull theory that includes distinctions between different types of Bourdieu's capital

Innovation 1: Using Chinese concepts to increase understanding of the motivations of Chinese international students

Face is one of the most fundamental concepts in Chinese culture, and originated from Ancient China. The concept of face encompasses *mianzi* (in Chinese "面子"), which refers to one's social standing in the community, and *lianzi* (in Chinese "脸子") which refers to one's moral character. A person or family can be given face through their achievements or actions that receive affirmation bestowed upon them by others. A person or a family can also lose face through their own actions or inactions (for example, failing an exam or neglecting filial duties) or the actions or inactions of someone they are associated with. If one loses *mianzi*, they feel they lose their dignity and their social respectability. If one loses *lianzi*, then they feel they have lost the trust others place in them.

Face shapes many aspects of Chinese society besides relationships, although face is indeed vital in Chinese personal and interpersonal relationships, and shapes all personal interactions. In China, the structure of interdependence within society enables the value of face to be extremely important, and consequently face plays a relatively more important role in evaluating actions and making decisions than a country that has a relatively weaker sense of interdependence like the UK, as one's actions not only affects an individual's face, but also their entire family's face. The Confucian values of filial piety and maintaining social harmony further help the concept of face to powerfully shape Chinese society.

Face is so deeply engrained in Chinese culture that almost every decision can be related to face, from buying gifts for relatives when one visits them to cheating in an exam.

Therefore, I hypothesise that the motivations of Chinese students can fundamentally shaped by face. Going to a more reputable university gains face, as it is a public sign that one's child has being well brought up. A family can gain more face through certain programmes than others; a business masters certificate looks better than a creative arts masters certificate. Some countries can give more face than others; in Chinese thinking, a degree from the UK is seen as more impressive than a degree from South Korea, so even a degree from an non-elite UK university will reflect favourably upon the student's family. Even the reasons pushing students away from China are linked to face. For example, the pressurised environment of China is a common motivation for studying outside China, and this pressure arises partly due to face; the risk of losing face pressures individuals to constantly consider the needs of those they are connected to, and be ready to help them if necessary. This leads on to the another essential Chinese concept: *guanxi*.

Cuanxi (in Chinese 关系; literally "shut connections") refers to interdependent, long-term relations between two individuals or groups built on trust, mutual obligation and reciprocity. Both giving and receiving assistance is expected for all persons whom are connected by *guanxi*. Furthermore, *guanxi* permeates all areas of life: professional, social and personal.

Cuanxi can be seen as a social resource that can be acquired by investment of time or money in order to obtain benefits for both individuals and groups. A key part of *guanxi* is the notion of personal interdependence and mutual reciprocity that underpins it; if two people have *guanxi* with each other, then they are both obliged to help one another. The concept of *guanxi* is fundamental to the process of forming social relationships in China, and is therefore important to understanding any group from China, including Chinese international students.

The importance of face in Chinese culture also allows *guanxi* to flourish; to not provide help for someone in your *guanxi* network when they are in need (when you are able to) will cause you and your family to lose face, as it will appear that you have not being brought up properly. If your family is seen as unreliable, it will debase your family's social standing in the community, and may cause others to break their *guanxi* with you. In a society when *guanxi* is almost essential for many situations, from acquiring a job to getting urgent medical help when needed, to lose *guanxi* is not an option. Thus, the mechanism of face shapes social interaction in Chinese society, and enables *guanxi* to be a highly desirable, powerful tool that in turn shapes all of Chinese society.

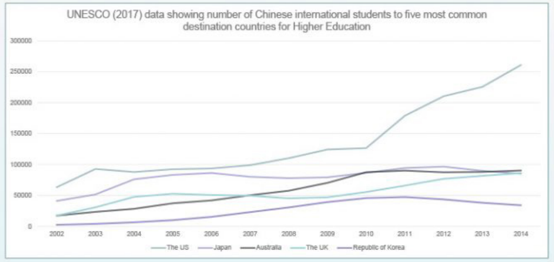
I also hypothesise *guanxi* plays a significant part in the motivations of Chinese students; parents, concerned for the child's welfare when they study abroad, will be keen to make the use of any *guanxi* connections to help make sure their child is well looked after while they are far away from home. Therefore, when a potential student is seeking which university to apply for, having a distant relative or a family friend who lives in the same city as a particular university will make that university a very attractive prospect in the eyes of the family.

Further, understanding *guanxi* will shed more light in understanding the social networks Chinese students form while they are in the UK. The social networks will have a great bearing on their overall experience of living in the UK, which will in turn affect the motivations of future students; if someone has had a positive experience studying in a particular country or city, then that is a much greater motivation to also study in that country or city. Of course, the opposite also applies.

The concept of *suzhi* (in Chinese, "素质"; literally "essence of character") refers to one's personal qualities. More specifically, *suzhi* is used to "judge the value of a human being according to his or her knowledge, skills, morality and manners". Understanding *suzhi* is important to help university staff and teachers understand Chinese international students as *suzhi* shapes what Chinese believe proper character and behaviour to look like.

Suzhi is a particularly important factor to consider in seeking to understand the motivations of Chinese students as *suzhi* is related with education; in traditional Chinese thinking, learning, wisdom and moral character are seen to be all positively associated with to each other. In contemporary China, those with high *suzhi* are seen as elite, educated, urban dwelling and sophisticated, while those with low *suzhi* are seen as uneducated, rude and rural dwelling. Thus, going to the UK to develop one's *suzhi* by acquiring skills such as presenting skills, teamwork, independent working, self-confidence and broadmindedness, thereby gaining an advantage in social and economic life, is seen as key reason to study in the UK. Therefore, the more personal skills one gains by studying and living (and potentially working) in a foreign country, the higher *suzhi* that person will attain. This also links to face; for if one attains high *suzhi*, they and their family will gain face.

In summary, I believe the concepts of face, *guanxi* and *suzhi* play vital roles in the decisions of Chinese international students to study in the UK. Further, face shapes *guanxi* and *suzhi*. Therefore, any theorisation of the motivation of Chinese international students should consider these concepts. When I use qualitative interviews to ask Chinese international students to explain how they came to the decision to study in the UK, I will pay careful attention to these concepts. Should substantial evidence be found to support my hypotheses, then I will have established a more Chinese orientated framework for understanding the motivations of Chinese international students.



Innovation 2: Developing a typology that visually summarises Li and Bray's two-way push-pull theory, while enhancing it using Bourdieu's theory of capital

The push-pull theory has been widely used to theorise international migration, and subsequently international student migration. This theory is based on the idea that the reasons people migrate abroad consist of push reasons (negative factors about the environment of their own country such as lack of availability or unfavourable political environment) and pull reasons (perceived positive factors of the country they are moving to such as availability of a desired resource). Li and Bray (2007) are also accredited for broadening this concept to include reverse push factors (such as desiring not be parted from one's family and friends) and reverse pull factors (such as higher costs of living). Li and Bray's two-way push-pull theory therefore is useful for achieving a broad understanding the decisions of international students to study abroad, because it encompasses both advantages and disadvantages as well as reasons concerning both the source country and the destination country.

Bourdieu's theory of capital is also widely used in studies about the motivations of international students. Bourdieu believed that the basis of the decision-making process is to gain "capital". The more capital one has, the more choice and power they can use. Capital can take many forms. For example, money, property or assets can be considered as economic capital, social networks can be considered as social capital, a degree from a reputable university can be considered a institutionalised cultural capital, and personal skills can be seen as embodied cultural capital. The key premise to the theory is that in order to gain more power and overall capital, individuals and groups convert one form of capital into another. For example, parents may invest lots of economic capital into sending their child to study abroad, which then enables the child to gain institutionalised culture capital, embodied cultural capital and social capital. Later on, these other forms of capital can help their child obtain a good job, thus the child converts their cultural and social capital back into economic capital.

However, very few have thought about combing these two theories. Therefore, using the common push, pull, reverse push and reverse pull factors other researchers found significant to the decision of Chinese students to study abroad, I decided to combine them all into a single table, so that it can be visualised more clearly. Then, using Bourdieu's theory of capital, I divided the push, pull, reverse push and reverse pull factors into four categories that corresponded to the different forms of Bourdieu's capital (institutionalised cultural and embodied cultural, social and economic). Given Bourdieu's emphasis on convertibility of capital and how each form of capital is connected to the others, this typology adds an extra layer of depth to Li and Bray's push-pull theory model, while combines the complex advantages and disadvantages to the decision to study aboard into a single table.

This typology is displayed in the table below. Blue represents reasons connected with gaining or sacrificing institutionalised cultural capital, purple represents reasons connected with embodied cultural capital, red represents social capital reasons, while green represents profits or costs in economic capital.

	Reasons to go to the UK	Reasons to stay in China
Reasons connected with home country (China)	• Lack of HE accessibility • Pressures of life environment	• More relevant degree programmes • Closer to family • Better social life • Low employability prospects abroad
Reasons connected with host country (UK)	• Reputation of HE quality • More choice of degree programme • Short duration of postgraduate programmes • Intercultural environment and skills • Ability to travel in the UK and Europe • Experience foreign teaching styles • Acquire "foreign" skills such as critical thinking • Improve English ability • Building social and professional networks • Friends and family living in the UK • Increases prospects of working abroad or in an international environment • Favourable exchange rate • Future employability prospects	• Uncertainties with visa approval • Lack of actual intercultural experience at most UK universities • Linguistic challenges • Unfamiliar teaching styles • UK food • Fears of security (terrorism) • Stress and loneliness • High tuition fees • High living costs • Restrictive immigration policies (hard to find work afterwards)

Next steps

I will use qualitative interviews to collect data from Chinese international students about their motivations to study in the UK, as well as their experiences. After using coding techniques to analyse the data, I will see if the responses fit with my innovative theorisation and my innovative typology.

If the Chinese concepts of face, *guanxi* and *suzhi* shape the motivations of the Chinese students in my fieldwork, then perhaps my theorisation is a helpful way to understand Chinese students, which will help inform university policy.

If the reasons Chinese students give for why they chose to study in the UK can be summarised onto a table similar to the one above, then my typology can be seen as clear and concise way for other scholars to visualise micro-level factors within the rapidly growing field of international student mobility.

Key references

Chinese student mobility data is from UNESCO website (http://data.uis.unesco.org/) Last accessed: 29/11/2017

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KEY MATERIAL

INTRODUCTION or BACKGROUND

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RESULTS

Also one of the first places readers will look!

Segmenting

- Subheadings
  - Hypotheses
  - *Bulleted* findings per hypothesis (interested readers will ask for more)

Include the **most important** charts, tables, or graphs

- 1–4 total
- *Choose wisely!*
  - Should illustrate and extend bulleted findings
  - Should each illustrate a different point, finding, etc.

Procedural Sedation: The Brighton UK experience.

Background:

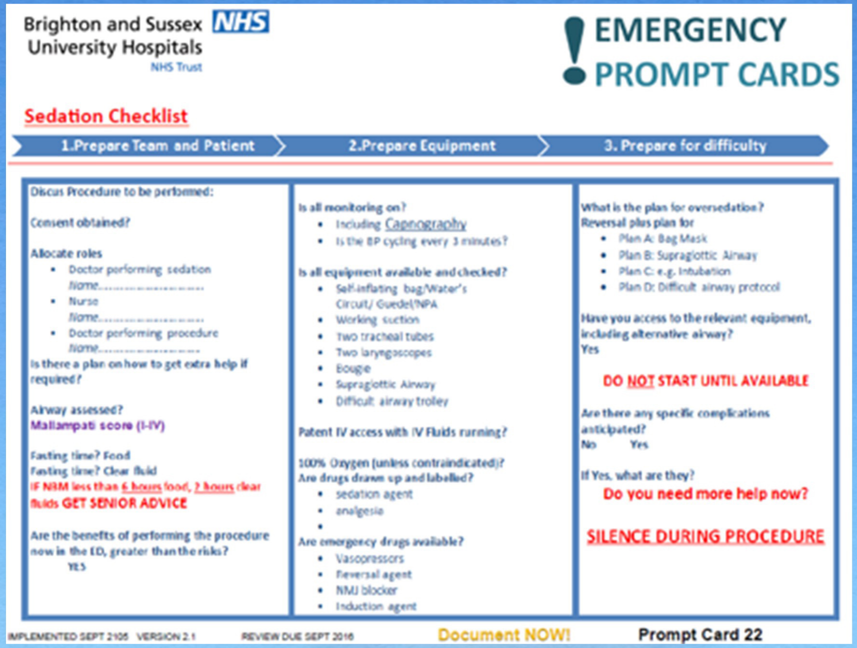
Procedural sedation has long been an integral part of ED pain management especially for orthopaedic manipulations. In 2012 the UK Royal College of Emergency Medicine issued guidelines on safe sedation in the ED. This was a joint work with the Royal College of Anaesthetists and reflects not only the consolidation of the specialty of Emergency Medicine in the UK, but also the fact that all trainees now have a minimum of 6 months anaesthetics training .

Safety:

Brighton Royal Sussex County University Hospital has a long tradition of sedation and teaching and has over the past 10 years developed a training program to ensure safe sedation for both doctors and nursing staff. All sedations are done in the Resus area as per the college guidelines but in addition we have introduced a checklist which is used 100% of the time by nurses and doctors. As a result our safety record is excellent and it has been exported to other hospitals in the UK.

Recognized training:

The Royal College of Emergency Medicine recommends a level 1 sedation sign off for all those performing ED but as yet there is no national course or way of recording this. We have introduced a training log book with the objective of being able to offer this recognized sign off to all national and international trainees who pass through our department.



Brighton and Sussex NHS
University Hospitals
NHS Trust

EMERGENCY
PROMPT CARDS

Sedation Checklist

1.Prepare Team and Patient | **2.Prepare Equipment** | **3. Prepare for difficulty**

1. Prepare Team and Patient

Discus Procedure to be performed:

Consent obtained?

Allocate roles
- Doctor performing sedation
  Name.........................
- Nurse
  Name.........................
- Doctor performing procedure
  Name.........................

Is there a plan on how to get extra help if required?

Airway assessed?
Mallampati score (I-IV)

Fasting time? Food
Fasting time? Clear fluid
IF NBM less than 6 hours food, 2 hours clear fluids GET SENIOR ADVICE

Are the benefits of performing the procedure now in the ED, greater than the risks?
YES

2. Prepare Equipment

Is all monitoring on?
- Including Capnography
- Is the BP cycling every 3 minutes?

Is all equipment available and checked?
- Self-inflating bag/Water's Circuit/ Guedel/NPA
- Working suction
- Two tracheal tubes
- Two laryngoscopes
- Bougie
- Supraglottic Airway
- Difficult airway trolley

Patent IV access with IV Fluids running?

100% Oxygen (unless contraindicated)?
Are drugs drawn up and labelled?
- sedation agent
- analgesia
-

Are emergency drugs available?
- Vasopressors
- Reversal agent
- NMJ blocker
- Induction agent

3. Prepare for difficulty

What is the plan for oversedation?
Reversal plus plan for
- Plan A: Bag Mask
- Plan B: Supraglottic Airway
- Plan C: e.g. Intubation
- Plan D: Difficult airway protocol

Have you access to the relevant equipment, including alternative airway?
Yes

DO NOT START UNTIL AVAILABLE

Are there any specific complications anticipated?
No Yes

If Yes, what are they?

Do you need more help now?

SILENCE DURING PROCEDURE

IMPLEMENTED SEPT 2105 VERSION 2.1 REVIEW DUE SEPT 2016 Document NOW! Prompt Card 22

Change in practise:

1)Over the past 8 years there has been an increase to over 65% of sedations now being performed by Registrars (senior non-consultant doctors) as opposed to only 41.9% in 2006 (despite this being a time when 24h consultant cover was not available).

2) Drug choice has changed from 97.7% being midazolam based in 2006, to 85% now being propafol based. The combination used principally in 2006 was 58.14% midazolam-morphine with no propafol use at all. In 2014-15 only 2.5% of sedations were done using morphine-midazolam with a more varied use of ketamine, fentanyl and propafol. Etomiodate is not used at all, as is the case generally in England.

3) We have also increased our numbers of sedations threefold.

Conclusion.

Safe sedation needs systematic training of all those involved.

Checklists used simultaneously by nurses and doctors during the sedation leads to excellent safety records.

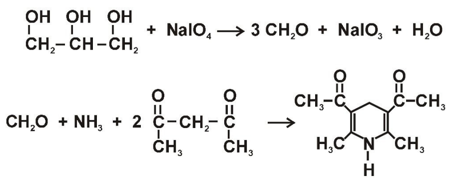
For further information about our sedation training please contact duncan.bootland@bsuh.nhs.uk

Introduction

Glycerol is extensively used in nearly every industry. Thanks to emollient and demulcent properties, glycerol is an important ingredient in a variety of pharmaceutical preparations. Because of its physiological activity there is an undeniable need for a rapid and specific method for quantitative assay of this analyte. Many analytical methods reported for determination of glycerol are based on enzymatic reactions. These methods are complicated, costly and time consuming. Gas chromatography can also be used for glycerol determination but it must be preceded by chemical silylation, which is not suitable for aqueous matrices. For these reasons a study was undertaken to develop a simple, rapid and inexpensive method for the determination of glycerol in insulin pharmaceutical preparations.

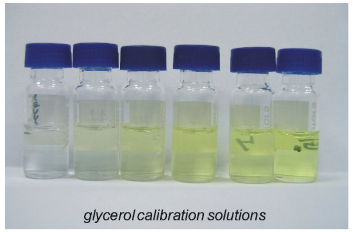
Reaction

The method developed is based on oxidation of glycerol to formaldehyde with periodate, reaction of formaldehyde with acetylacetone in the presence of ammonium acetate to form 3,5-diacetyl-1,4-dihydrolutidine (DADHL):



Materials and methods

Human insulin preparations from different producers were diluted with Milli-Q water. The periodate solution: 3 mM sodium periodate solution in an acetate buffer containing 1 M ammonium acetate and 0.6 M acetic acid, the acetylacetone solution: 1% acetylacetone solution (v/v) in 2-propanol, were prepared daily. Glycerol stock solution and calibration solutions were prepared using Mili-Q water. Samples were prepared as follows: 1 ml of a diluted insulin preparation or calibration solution or water was mixed with 2 ml of periodate solution. Then 5 ml of acetylacetone solution were added and put in a water bath at 50°C for 20 min.



glycerol calibration solutions

RP-HPLC

The samples were analyzed by RP-HPLC on a Waters Alliance system equipped with a photodiode array detector. Throughout this work 250 x 4.6 mm reversed phase C18 column (ACE) with particle diameter of 5 μm and pore size of 100Å was used. Column temperature was kept at 40°C. All separations were monitored at 410 nm. Elutions were done with the linear gradient of 66-60% solvent A for 20 minutes. Solvent A was 0.1% TFA, solvent B was acetonitrile-water (90:10, v/v) with 0.1% TFA. The flow rate was 1.0 ml/min.

Results

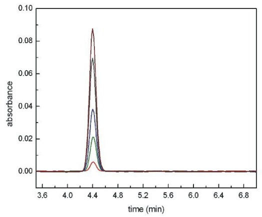


Fig. 1 Chromatograms of glycerol calibration solutions: 0.016, 0.049, 0.081, 0.131, 0.163 mg/ml

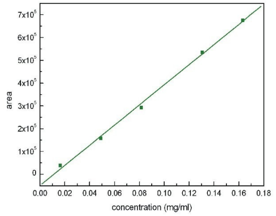


Fig. 2 Calibration curve for determination of glycerol

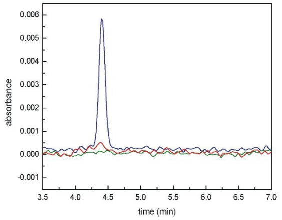


Fig. 3 Chromatograms of glycerol calibration solution (blue line 0.016 mg/ml), placebo (red line), blank (green line)

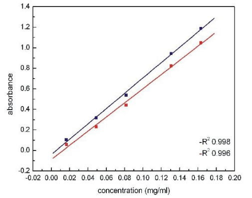


Fig. 4 Calibration curve for determination of glycerol: 1 h (blue line), 24 h (red line) after preparation. Data from UV-Vis spectrophotometer

Tab. 1 Glycerol determination in insulin preparations

Preparation	Glycerol concentration mg/ml declared	obtained	%RSD
soluble human insulin injection (producer A)	16	15.87	2.3
soluble human insulin injection (producer B)	16	16.03	2.3
isophane human insulin injection (producer A)	16	15.36	2.8
biphasic isophane human insulin injection (producer A)	16	16.07	1.6

Conclusion

The applicability of the acetylacetone method for quantification of glycerol in insulin preparations was successfully demonstrated. The method described needs to be validated regarding selectivity, accuracy, precision and linearity.

References

1. P. Bondioli, L.D. Bella, Eur. J. Lipid Sci. Technol., 2005, 107, 153
2. Y. Kondon, S. Takano, Anal. Chem., 1986, 58, 2380
3. www.cyberlipid.org/acylglyt/acy10002.htm

KEY MATERIAL

INTRODUCTION or BACKGROUND

GOALS and OUTCOMES

METHODS or PROCEDURES

RESULTS

DISCUSSION or CONCLUSIONS

THANKS and REFERENCES

DISCUSSION, CONCLUSIONS, TAKEAWAYS

Coherence

- 1–2 short paragraphs; 5–8 sentences
- Be self-referential to other sections of the poster

More typically prose than bullets

Clear *interpretation* of findings (do NOT repeat)

What findings mean to the field

Next steps for you/reader to extend the work

KEY MATERIAL

INTRODUCTION or BACKGROUND

GOALS and OUTCOMES

METHODS or PROCEDURES

RESULTS

DISCUSSION or CONCLUSIONS

THANKS and REFERENCES

GRATITUDE, FUNDING, AND REFERENCES

Usually placed toward the bottom

- This section does not need to grab attention

Thank sponsors and others involved

- Organizations, businesses, schools, participants, and other entities for their assistance (preserve privacy as required)

Cite any images or literature used

Segmenting and coherence are less of a concern here

LAYOUT AND READABILITY

Talked about:

- How much content to include
  - Coherence Principle
- How to concisely present content
  - Segmenting Principle
- Which content to include

Now, what is the best way to lay it out?

- Multimedia Principle
- Contiguity Principle
- Flow and white space

THE MULTIMEDIA PRINCIPLE (& REVISITING THE COHERENCE PRINCIPLE)

People learn better from words and pictures than from words alone

- Across 11 different studies, all students who received words and pictures performance better on a subsequent transfer test than students who received the same information in words alone (55 to 121 MORE correct solutions to a problem).

HOWEVER, pictures and words must be directly related (coherence principle)

- Avoid decorative, but irrelevant graphics and crazy colors (seductive details)
- Also omit overly-detailed charts
- Ensure words on chart refer clearly to chart elements
- Ensure text uses same terminology as graphic

THE MULTIMEDIA PRINCIPLE
(& REVISITING THE COHERENCE PRINCIPLE)

Takeaway: Include graphics, but *choose wisely!*

How to achieve it:

- Photograph of research taking place, key equipment, etc.
- Diagrams, formulas, equations, or proof
- Tables and charts that clearly represent the study results

ZIGBEE (802.15.4) WIRELESS SENSOR NETWORK FOR SMART AGRICULTURE

INTRODUCTION

This research is completed by developing a Data Acquisition system consist of soil moisture sensor, embedded system, wireless sensor network, and data analysis software. This sensor will receive relevant physical signal from the soil where amplified and digitized. Then converted into electrical output and passed to the embedded system. The embedded system will transferring the data wirelessly to the assigned wireless network and displayed it on the Laboratory Virtual Instrument Engineering Workbench (LabVIEW) graphical monitoring system .

OBJECTIVES

- To learn and understand the theory of wireless sensor networking system through ZigBee (802.15.4).
- To design a suitable wireless sensor networking system that can monitor the Smart Agriculture System.
- To design a graphical system that automate monitoring the Smart Agriculture system using LabVIEW.

METHODOLOGY

The diagram of the wireless sensor networks system is shown in figure below. It consists of a receiver which collects data from the transmitter over Zigbee communication links. The receiver also acts as a decision maker to actuate the water pump based on the parameters obtained. All of these devices are powered separately using 9V battery (exclude the water pump). The program are displayed on the front panel of LabVIEW.

TRANSMITTER

RECEIVER

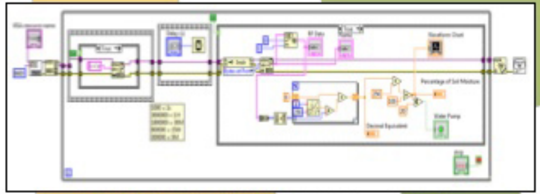


Figure 1: Smart Agriculture LabVIEW graphical design for monitoring system

DISCUSSIONS

- During the night time, the percentage of soil moisture are almost constant, but around 3:00am the percentage drop due to Percolation (the movement of water through the soil, and its layers, by gravity and capillary forces)
- During the day time, the percentage readings of soil moisture keep decreasing due to the evaporating of water contain in the soil to atmosphere. The evaporation rate also affect the percentage reading for day time especially during the mid-day.
- When the percentage of soil moisture less than 20% the water pump will generate automatically to supply water to the plant; for night time around 8:15am and day time around 6:45pm.
- The wireless program for LabVIEW has low accuracy in displaying its data received due to the noise signal and also the graphical program designing.

CONCLUSIONS

The wireless monitoring system for Smart Agriculture is possible to be built by using small system which are also portable and has a long lifetime. It also proved that the Zigbee (802.15.4) wireless sensor network system are able to transmitting and receiving data at a range of up to approximately 30 meter with only a single router and a coordinator radio.

RESULTS

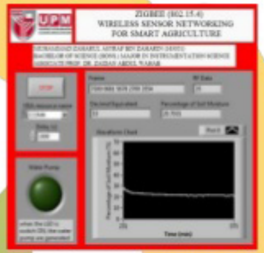


Figure 2: Smart Agriculture LabVIEW monitoring system (front panel)

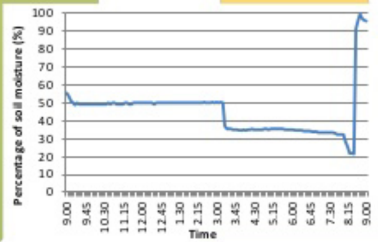


Figure 3: Percentage of soil moisture during night time

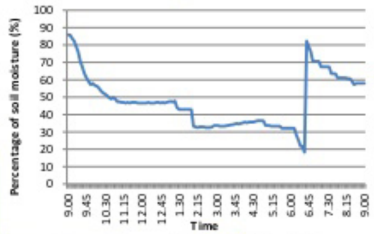


Figure 4: Percentage of soil moisture during day time

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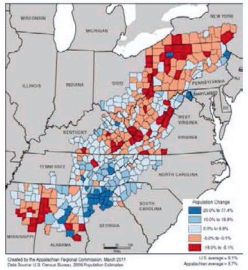
- A. Abdullah, A. Bamawi. Identifiction of the type of agriculture suited for application of wireless sensor networks. Russian Journal of Agricultural and Socio-Economic Science, 2012
- Vellidis, G., V.Garrick, S. Pocknee, C. Perry, C. Kvien, M. Tucker. Low wireless will change agriculture . In: Stafford, J.V. (ed.), Precision Argiculture '07 – Proceedings of the Sixth European Conference on Precision Agriculture, Skiathos, Greece

Evaluation of an Initiative to Develop Community-based Capacity in Appalachia for Implementing Evidenced-based Practice for Diabetes Prevention and Control

Background

- The Center for Disease Control and Prevention (CDC) has supported the Appalachian Diabetes Control Project through an Inter-Agency Agreement (IAA) with the Appalachian Regional Commission (ARC) since 2000. The ARC is a federal-state partnership established in 1965 by the Appalachian Regional Development Act to promote economic and social development of the Appalachian Area. The Act was amended in 2002 to define the Region as 420 counties comprising all of West Virginia, and parts of Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee and Virginia.

The Appalachian Counties



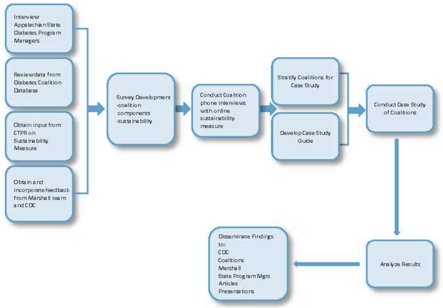
- In FY 2011, the Commission designated 82 counties as distressed. These counties are among the poorest 10% nationwide, based on rates of poverty, unemployment and per capita market income. In additional 86 counties have been designated as "at risk' of severe economic decline. The unadjusted prevalence of diabetes by county classification is approximately 13% for distressed counties (95% CI, 12%-15%), compared with the national median prevalence of 8%.
- The Center for Rural Health at the Joan C. Edwards School of Medicine, Marshall University, in Huntington West Virginia is the subcontractor for the ARC and the working arm of the project in Appalachia. Since 2000, the staff of the Center has established 67 Coalitions in nine Appalachian states, in distressed and at-risk counties.
- The combined funds provided by both CDC and the ARC, is $242,000 annually, and provides resources to Marshall University to pay the salaries of staff to provide training and follow-up of *Diabetes Today*, a framework for planning and implementing a program for persons with diabetes, or persons at risk for diabetes at the community level.

Problem/Question

Are coalitions an effective means for facilitating healthy behavior change and social and organizational support for diabetes prevention and control in Appalachia?

Methodology

Appalachian Diabetes Coalition Evaluation (ADCE)



- Multi-methods evaluation including quantitative and qualitative assessment of coalition membership, activities, perception of success, analysis of patterns and commonalities among 33 coalitions and in-depth case studies of 5 coalitions.
- Interviews were held with State Diabetes Prevention and Control Program (DPCP) Coordinators in states with Appalachian Counties.
- Coalition leaders completed a coalition assessment survey, and a sustainability assessment tool developed by the Center for Tobacco Research at St. Louis University.
- Quarterly reports to Marshall University were also assessed for both quantitative and qualitative information about demographics, populations served, organizational capacity, resources such as grants and in-kind support, training, interventions/programs implemented and barriers to coalition sustainability.
- The participation rates reported to Marshall University were coded based on the number of encounters.
- Finally, five coalitions in five states were selected for in depth studies:
  - Winston County, Mississippi
  - Pike County, Ohio
  - McDowell County
  - Johnson County, Tennessee
  - Clinton County, Kentucky

Structure and Resources

- Coalitions range in size from 4-23 members representing several sectors/disciplines.
- Recruitment was through direct contact, flyers, and local newspaper articles.
- Given the geographical barriers in this region, coalitions meetings varied. The majority met monthly (11), others quarterly (6). Others meet on a needed basis, whenever there was an activity planned or an urgent matter to be discussed.
- Five coalitions were sub-committees of a bigger group such as a larger wellness coalition. This structure allowed for less meetings and the sharing of support and resources among all members.
- Several coalitions continue to engage in diabetes related activities beyond the life of the original grant through in-kind contributions. Seventy-five percent of the coalitions formed are currently active today.
- Of the 33 coalitions who reported, 15 coalitions reported no in-kind. The total in-kind reported in 2011 was $101,102.

Communications and Interaction

- All coalitions communicate with Marshall University regularly.
- Almost half of the coalitions reported strong marketing to their communities. This was based on the estimated number of persons exposed to billboards, flyers, radio and TV public service announcements.
- Many coalition leaders have robust partnerships with media outlets such as the county newspaper and the radio.
- Of the 33 coalitions that responded to this survey, 20 felt there was strong awareness and interaction with the State DPCP.

Interventions

- Coalitions engaged in interventions related to diabetes, some evidenced based such as diabetes self -management, chronic disease self-management(7), walk with ease(19), with robust participation, or they engaged in activities that promoted general health and wellness in local communities and at the worksite.
- 18 coalitions reported sponsoring nutrition programs with robust participation, such as the Dining with Diabetes a implemented in collaboration with the County Extension Service, or other health education programs .
- Six coalitions focused their efforts on altering policies to support healthier living. Examples include: removing deep fryers from the school; implementing the Clean Air Act; introducing health school breakfasts; supporting the Safe Routes to School; sponsoring an open streets campaign to promote physical activity.
- Coalitions engaged in environmental changes such as building walking trails, and safe playgrounds in local schools.

The Sustainability Scores

The tool assesses coalition sustainability based on five indicators. The average overall program sustainability score of the 31 coalitions was 5.2 based on a Likert scale of 1-7. The mode score was 5.4, the median score was 5.2, the standard deviation was .85 and the range of scores was 3.17 (below average) to 6.68 (very sustainable).

Conclusion

- The Appalachian coalitions provide valuable services to their community.
- Coalition members have been able to change social and environmental conditions to provide opportunities to members of their community to practice healthy behaviors such as walking and good nutrition.
- These coalitions can effectively facilitate social and environmental changes that enhance the successful implementation of evidenced based practices.
- Coalition leaders are effective at enhancing community connectedness in Appalachia.
- The coalitions could benefit from the following: improved communication with state programs and other coalitions in Appalachia enhanced reporting of activities and outcomes, guidance on how to recruit and maintain volunteers, and more opportunities for strategic planning to enhance sustainability.

Walking on the Ralph Stout Park Trail

Contact Information

E-mail: cdcinfo@cdc.gov | Web: www.cdc.gov

National Center for Chronic Disease Prevention and Health Promotion

Division of Diabetes Translation

CS236147

THE CONTIGUITY PRINCIPLE

Words and relevant graphics (photos, tables, charts) need to go together

- Extraneous processing: using cognitive processing for things unrelated to learning the content
- Learners were given illustrated texts divided into two types. One group received materials with text integrated into each part of the illustration it described. The other group was given materials with text separated from the illustrations, placed below them in captions. Across five of these studies, "the integrated group produced between 43 and 89 percent more solutions than the separated group. The median gain … was 68 percent for an effect size of 1.12."

THE CONTIGUITY PRINCIPLE

Takeaway: Put pictures and their corresponding words together

How to achieve it:

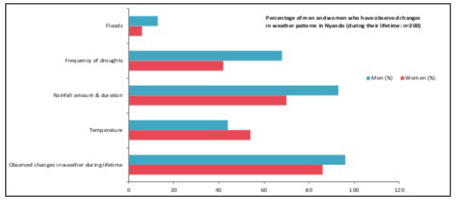
- Place graphics contiguous with text that refers to them
- Avoid an "images" section of the poster
- Label the key information in graphics
  (use arrows, circles, text…)

The addition of a red box draws the viewer to the important element of the image.

Engendering Climate Smart Agricultural Innovations in East Africa

Introduction
The negative impacts of climate change on agricultural productivity and food security varies by gender and wealth affecting the vulnerable groups, especially women. Various factors exacerbate the differential effects of climate change on gender, among them persisting socio-cultural behaviours, economic roles and responsibilities and political barriers. Other barriers include limited access to resources, new technologies, information and credit. In East Africa, women's reliance on ecological resources, coupled with the above further exacerbate the problem. This study conducted in Nyando, Kenya aims to understand the climate risks and adaptation strategies in agriculture for men and women across different household types. We used survey data from 200 households, complimented with information from four focus group discussions. Out of the respondents, 45.5% and 54.5% were male and female headed households respectively.

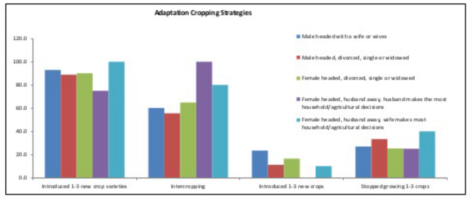
Results
Observed changes in weather patterns
All households have experienced climate shocks within the last 5 years—drought, flood, intense storms, heat and cold spells. Incidences of drought (every 2 years) and flooding (every year) lead to enormous loss of crops, livestock, trees, safety nets and social connections as people become stingy in sharing resources. For women, crop failure leads to loss of income, negatively affecting social support systems and cash flow.



Assets ownership and access for climate change adaptation
- Women access & use of assets are bound by complex property rights & cultural rituals.
- Ownership & access to assets (e.g., land, livestock) is highly correlated to economic status, gender, education, wealth and position in the household, e.g., unmarried women with children & unmarried youth have limited access to assets.
- Women in all household categories have to seek consent from men.

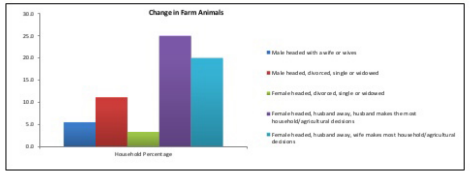
Changes in agricultural and livelihood strategies
All households are adapting to the changing climate, and their changes are small and incremental rather than transformational. Adaptation strategies are benign to all genders and they are mainly changes in their cropping and livestock systems and a few social changes all within the bounds of cultural acceptances. 64% of men and 57% of women reported to have made changes in their crop and livestock production or livelihood practices in response to climate risks.

Adaptation cropping strategies
Preferred adaptation strategy is introduction of new crop varieties (cowpeas, sorghum and beans) that are high yielding, shorter cycle, drought and flood tolerant. New crops introduced are pigeon pea and finger millet that are heat and drought tolerant. Maize and groundnuts are two main crops that some households have stopped growing due to decreased rainfall and poor soil fertility. Soil improvement changes include use of manure/composting, mulching and rotations.

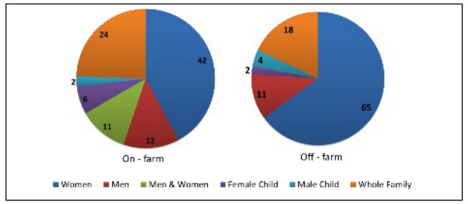


Learn more: ccafs.cgiar.org/

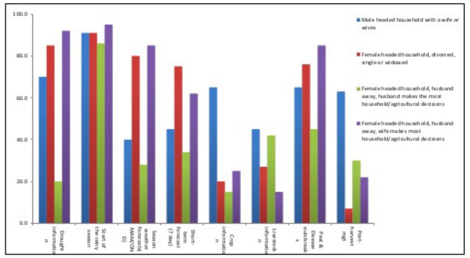
Change to farm animals
These include new breeds (diseases and heat resistant, fast growing, short gestation period, rapid weight gain, twining rate) of chicken, sheep and goats. Livestock management practices include herd reduction and zero-grazing units.



Diversifying livelihood strategies
With frequent drought, women in all the household types are spending more time on off-farm activities than men such as making and selling baskets and ropes, working in sugarcane plantation and factory, food for work program, small business, selling farm produce and charcoal.



Access to and use of weather information
Households' access weather information (start of the rainy season and drought), through radio and orally from traditional forecasters, family and neighbors. Women households (without influence of men) access seasonal and short term weather information. More men accessed information on livestock production than women.



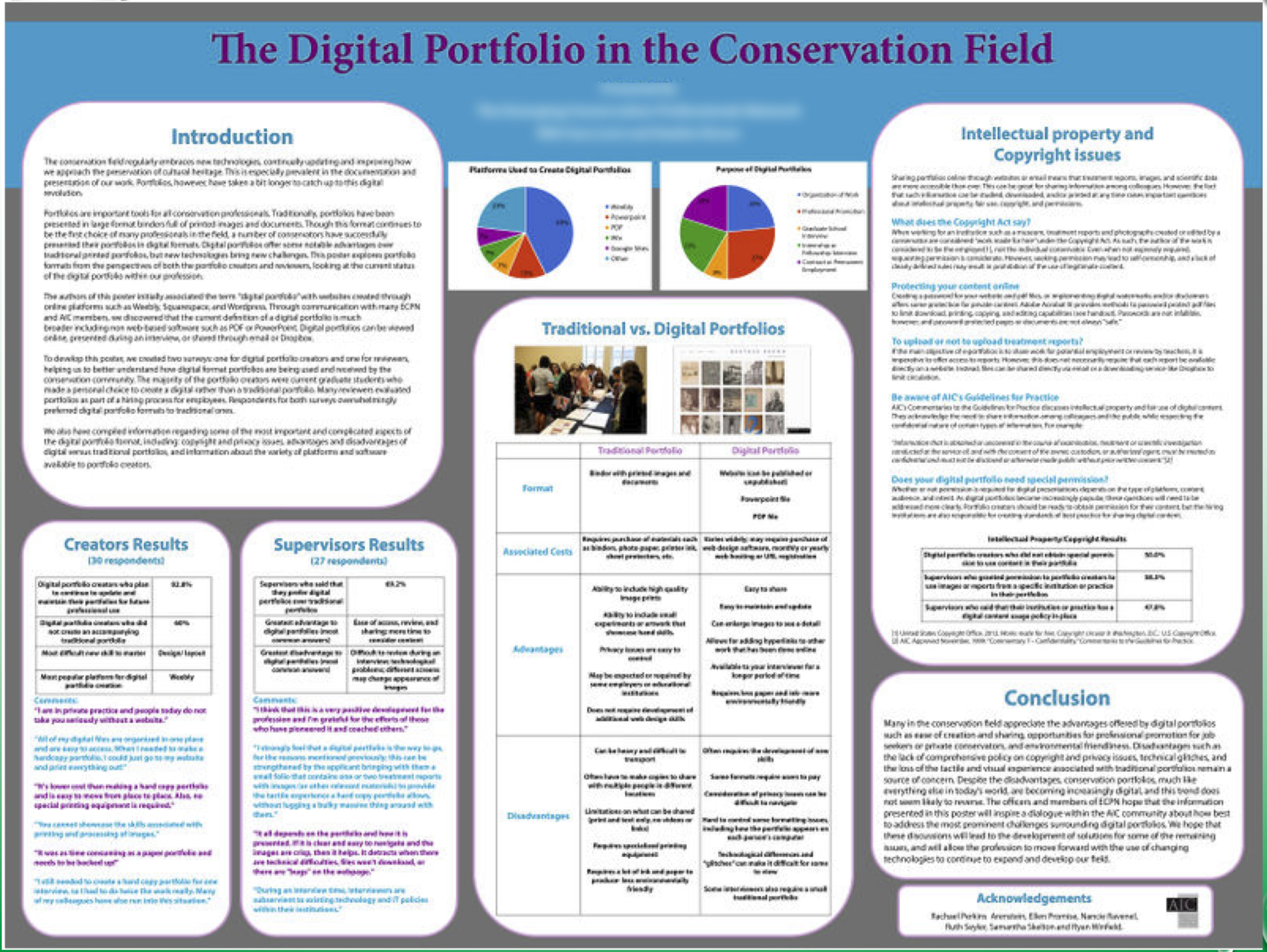
Conclusion
The interplay between gender dimensions and other factors such as social norms within Nyando in Kenya greatly influence how the community deals with the changing climate. Women do not have access to or control over much of the capital that can help them adapt to these climatic changes. In designing climate-smart agricultural practices, we must take into consideration:
- How the intrinsic interplay between gender and socio-cultural factors influence climate change adaptation in agriculture.
- Gender and social differences create differential access to and control of assets which influence adaptive capacity.
- Placing emphasis on climate-smart interventions that are likely to be beneficial to women in different households is important.
- To make progress towards a gender equity goal, attention must be given to the interrelated issues of social structure, and relations that define the interactions between men and women.

Reference
Twyman J, Green M, Bernier Q, Kristjanson P, Russo S, Tall A, Ampaire E, Nyasimi M, Mango J, McKune S, Mwongera C, and Ndourba, Y. 2014. Adaptation Actions in Africa: Evidence that Gender Matters. CCAFS Working Paper no. 83. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Kristjanson et al, 2012. Are food insecure smallholder households making changes in their farming practices? Evidence from East Africa. Food Security 4:381–397.

Mango J. Mideva A. Osanya W and Odhiambo A. 2011. Summary of baseline household survey results: Lower Nyando. CCAFS. Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org.

Contact details: Mary Nyasimi: M.Nyasimi@cgiar.org



The Digital Portfolio in the Conservation Field
Introduction
Intellectual property and Copyright issues
Traditional vs. Digital Portfolios
Traditional Portfolio
Digital Portfolio
Format
Associated Costs
Advantages
Disadvantages
Creators Results
(30 respondents)
Supervisors Results
(27 respondents)
Conclusion
Acknowledgements

FLOW: HOW PEOPLE READ

Consider your audience:

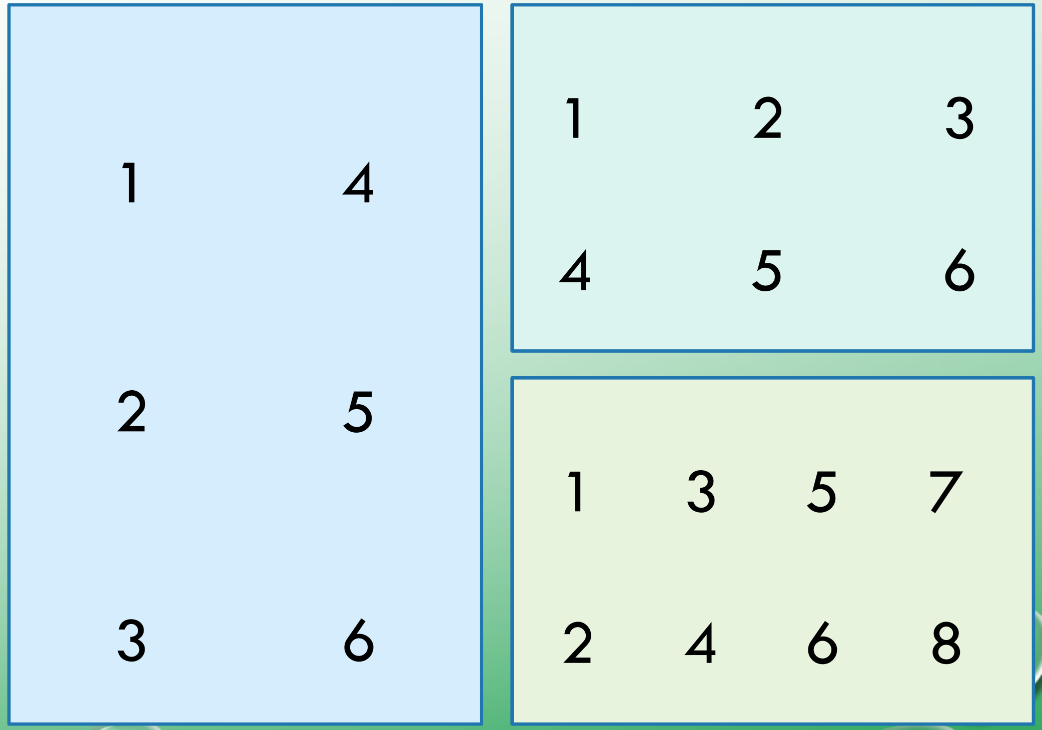
- Western reading pattern – normally left to right, top to bottom
- Presenting internationally? Norms may be different

Poster orientation matters, too

- Vertical: Usually top down, two columns
- Horizontal: Could create three or four columns; usually left to right top, then left to right bottom

Research shows…

- People read in an F pattern (skimming)
- Orient key materials to be noticed first!



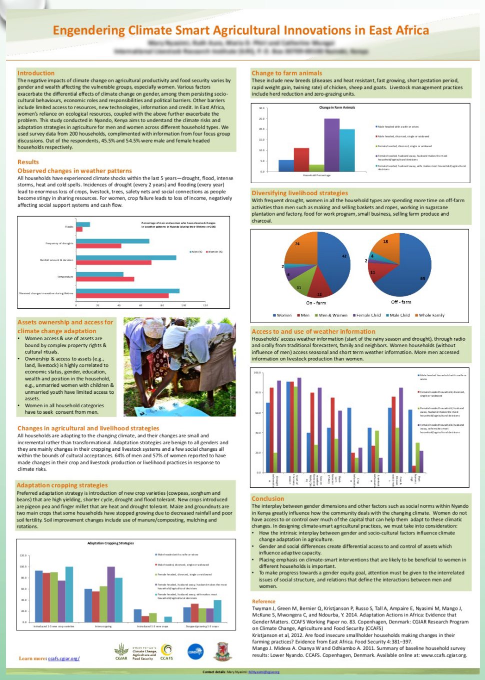
FLOW: HOW PEOPLE READ

Where should you put your most important information?

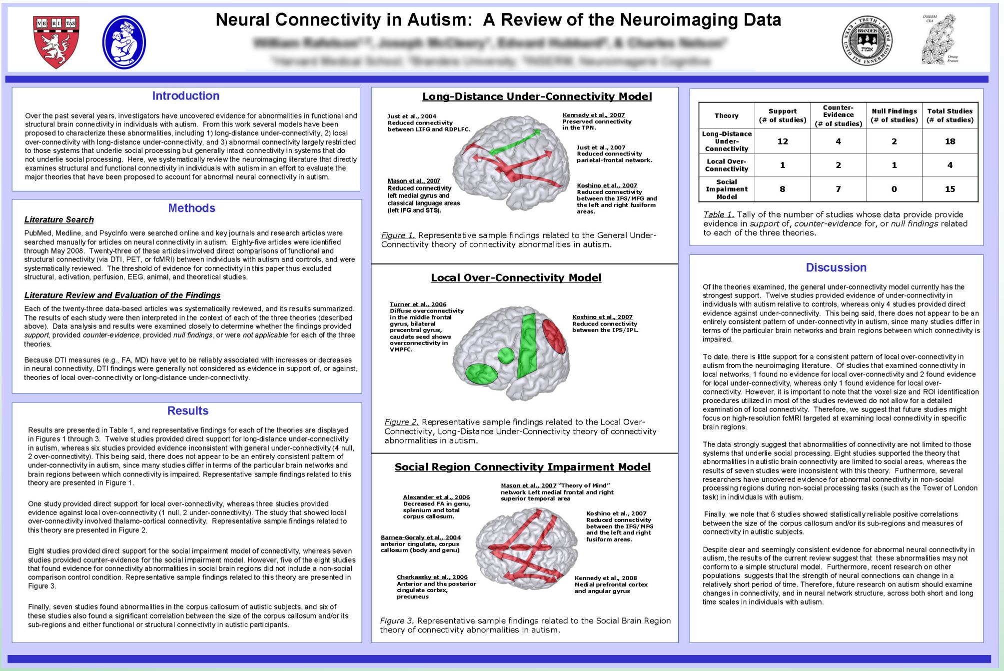
1	4
2	5
3	6

1	2	3
4	5	6

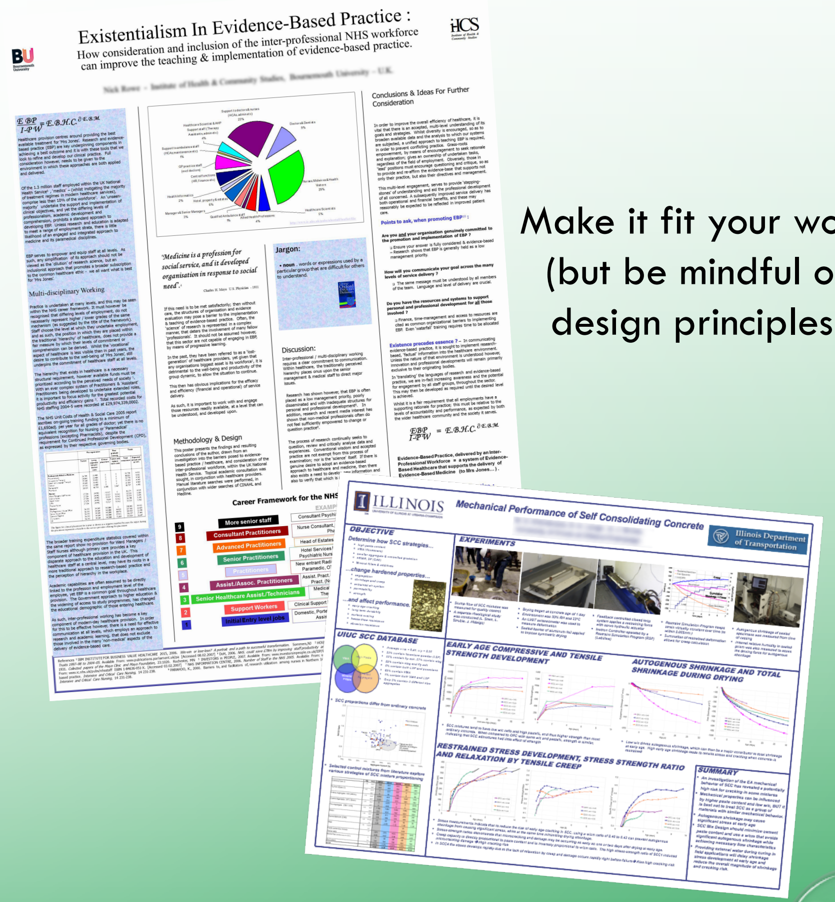
LAYOUT EXAMPLES



Vertical, two columns



Horizontal, 3 columns



Make it fit your work (but be mindful of design principles)

WHITE SPACE

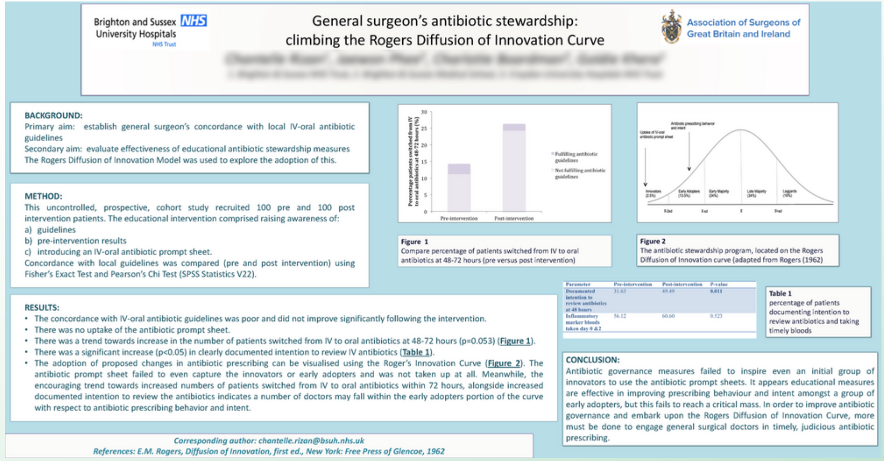
Use consistent white* space

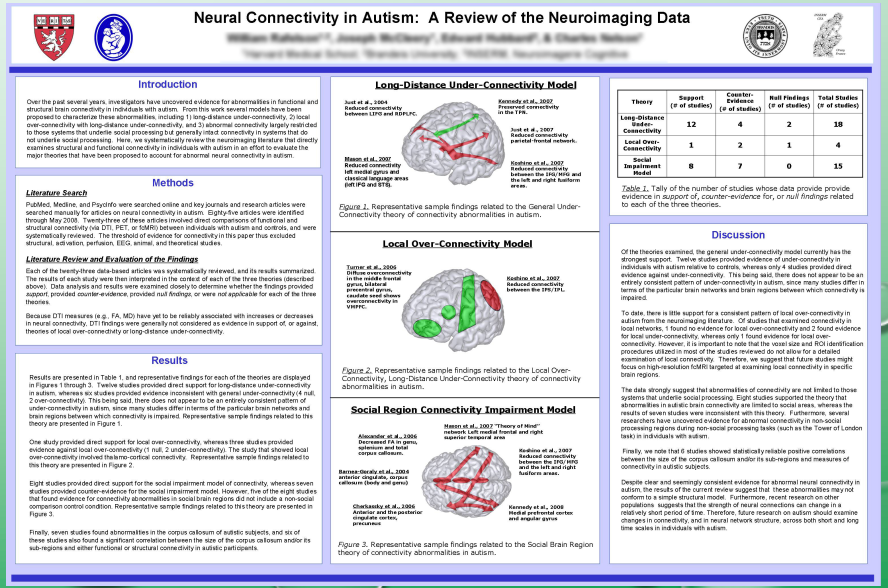
- Between sections
- Between headings and text
- Between images and text

Print an 8 ½ x 11" version of your poster, then step back

- Does it look good from a distance?
- This is how it will look when readers are approaching

**White space does not have to be white!*





EDIT, EDIT, EDIT!

Edit profusely

- Section headings as well as body text
- Formatting of references (cite your work!)
- Accuracy of dates, addresses, honorifics, and spelling of names
- Incorrect or inconsistent punctuation, especially in bulleted lists and chart legends

Have someone else edit

- Someone who is NOT one of the authors or a PI
- Colleague with some distance from the subject, friend or family member

Print out a draft at a readable size (might need to span two pages) and edit again

ACTIVITY

You're at a conference, strolling the poster session

- What's good?
- What's not so good?

Use the rating sheet to grade the DESIGN of the posters.

- You should not need to be an expert in the content of the posters!

About 3 minutes per poster, then discuss

Procedural Sedation: The Brighton UK experience.

Brighton and Sussex University Hospitals NHS Trust

Background:

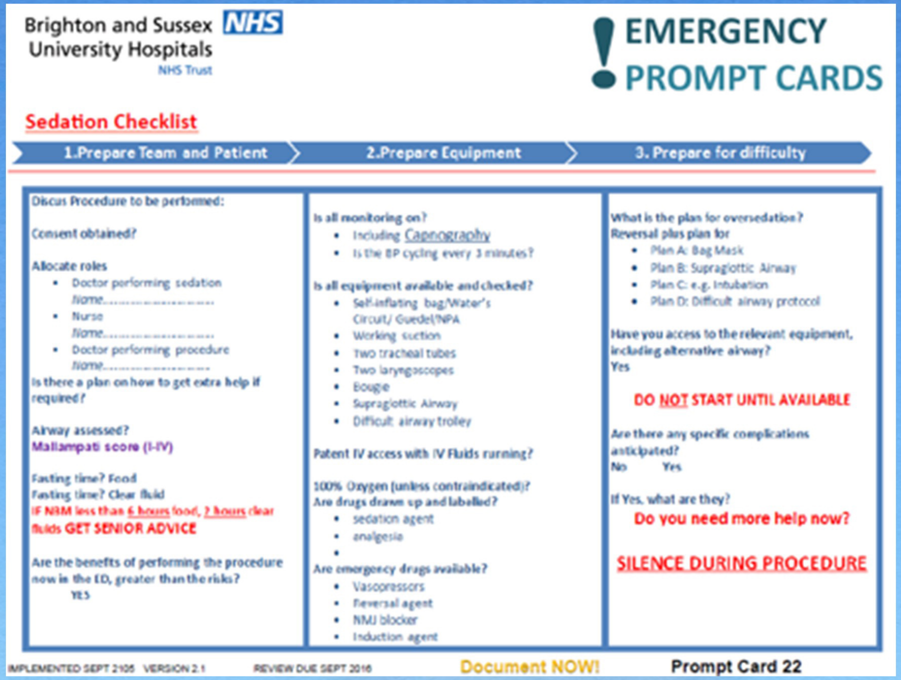
Procedural sedation has long been an integral part of ED pain management especially for orthopaedic manipulations. In 2012 the UK Royal College of Emergency Medicine issued guidelines on safe sedation in the ED. This was a joint work with the Royal College of Anaesthetists and reflects not only the consolidation of the specialty of Emergency Medicine in the UK, but also the fact that all trainees now have a minimum of 6 months anaesthetics training .

Safety:

Brighton Royal Sussex County University Hospital has a long tradition of sedation and teaching and has over the past 10 years developed a training program to ensure safe sedation for both doctors and nursing staff. All sedations are done in the Resus area as per the college guidelines but in addition we have introduced a checklist which is used 100% of the time by nurses and doctors. As a result our safety record is excellent and it has been exported to other hospitals in the UK.

Recognized training:

The Royal College of Emergency Medicine recommends a level 1 sedation sign off for all those performing ED but as yet there is no national course or way of recording this. We have introduced a training log book with the objective of being able to offer this recognized sign off to all national and international trainees who pass through our department.



Brighton and Sussex University Hospitals NHS Trust

EMERGENCY PROMPT CARDS

Sedation Checklist

1.Prepare Team and Patient | 2.Prepare Equipment | 3. Prepare for difficulty

1. Prepare Team and Patient

Discus Procedure to be performed:

Consent obtained?

Allocate roles
- Doctor performing sedation
  Name.......................
- Nurse
  Name.......................
- Doctor performing procedure
  Name.......................

Is there a plan on how to get extra help if required?

Airway assessed?
Mallampati score (I-IV)

Fasting time? Food
Fasting time? Clear fluid
IF NBM less than 6 hours food, 2 hours clear fluids GET SENIOR ADVICE

Are the benefits of performing the procedure now in the ED, greater than the risks?
YES

2. Prepare Equipment

Is all monitoring on?
- Including Capnography
- Is the BP cycling every 3 minutes?

Is all equipment available and checked?
- Self-inflating bag/Water's Circuit/ Guedel/NPA
- Working suction
- Two tracheal tubes
- Two laryngoscopes
- Bougie
- Supraglottic Airway
- Difficult airway trolley

Patent IV access with IV Fluids running?

100% Oxygen (unless contraindicated)?
Are drugs drawn up and labelled?
- sedation agent
- analgesia
-

Are emergency drugs available?
- Vasopressors
- Reversal agent
- NMJ blocker
- Induction agent

3. Prepare for difficulty

What is the plan for oversedation?
Reversal plus plan for
- Plan A: Bag Mask
- Plan B: Supraglottic Airway
- Plan C: e.g. Intubation
- Plan D: Difficult airway protocol

Have you access to the relevant equipment, including alternative airway?
Yes

DO NOT START UNTIL AVAILABLE

Are there any specific complications anticipated?
No Yes

If Yes, what are they?
Do you need more help now?

SILENCE DURING PROCEDURE

IMPLEMENTED SEPT 2105 VERSION 2.1 REVIEW DUE SEPT 2016 Document NOW! Prompt Card 22

Change in practise:

1)Over the past 8 years there has been an increase to over 65% of sedations now being performed by Registrars (senior non-consultant doctors) as opposed to only 41.9% in 2006 (despite this being a time when 24h consultant cover was not available).

2) Drug choice has changed from 97.7% being midazolam based in 2006, to 85% now being propafol based. The combination used principally in 2006 was 58.14% midazolam-morphine with no propafol use at all. In 2014-15 only 2.5% of sedations were done using morphine-midazolam with a more varied use of ketamine, fentanyl and propafol. Etomiodate is not used at all, as is the case generally in England.

3) We have also increased our numbers of sedations threefold.

Conclusion.

Safe sedation needs systematic training of all those involved.

Checklists used simultaneously by nurses and doctors during the sedation leads to excellent safety records.

For further information about our sedation training please contact duncan.bootland@bsuh.nhs.uk

Lessons learnt over three years of providing pre-hospital medical support for a marathon.
How to take the hospital out of the hospital.

Background

Over the last three years the Brighton Marathon has increased in size to become the 12th largest in Europe and the 27th largest in the world. This year there were a record 9,272 finishers with over 100,000 spectators.

Brighton has only one hospital, which would be overwhelmed if it was to see every runner or spectator who needed medical attention during the marathon. In order to overcome this problem Brighton Marathon has made the unique step of taking over the medical provision for the entire course including the surrounding population and all supporters.

Methods


Major cubicle in a treatment tent

Following an interview with the Medical Director of the Brighton Marathon, Dr Rob Galloway, we were able to pool data from a number of sources. The marathon medical team holds data concerning the number of presentations, the presenting illness and and number of healthcare providers who were working over the marathon weekend.

	2012	2013	2014	2015
Runners	9052	9315	8970	9426
Finishers	8921	9110	8723	9243

Average number of medical contacts	270
Number conveyed to hospital in 2015	11
Number admitted to hospital in 2015	2

Results

The number of healthcare professionals has been increased from 73 in 2013, to 87 in 2014, and 143 in 2015. This means that across the footprint there is not only a wide range of skills, but also senior support provided by consultants in anaesthetics, intensive care and emergency medicine. In 2015 there were 52 doctors (including 10 consultants), 42 nurses, 4 operating department practitioners, 16 paramedics, 14 podiatrists, 9 physiotherapists and 6 pharmacists. Fifteen sites around the course were staffed, including two major treatment tents with resuscitation areas. There were eight ambulances covering the footprint, with three cycle units and two mobile medical units with advanced airway skills and resuscitation drugs.

The two major treatment tents at the finishing line and at the eighteen mile point had separate triage, podiatry and physiotherapy areas, with major treatment cubicles and a total of five fully equipped resuscitation areas. The finishing line tent saw all runners who had passed the finishing line, whilst the other tent saw patients conveyed by ambulance from the rest of the marathon footprint, and those who walked in.

Recent sponsorship from Philips has provided monitoring, ventilators and point-of-care blood testing which has helped the diagnosis of hyponatraemia and it's subsequent management. They have also helped to finance the publication of a comprehensive medical guide which provides standard operating procedures for managing a wide range of conditions, and details of how the medical structure for the Marathon works.

Following feedback from a critical incident 3 years ago all staff now have tabards which identify them as part of the medical team, as well as showing their name and specialty - facilitating closed loop communication.

Discussion

Increasing staff numbers, training, and the adoption of treatment algorithms and protocols have provided the backbone of changes made over the last 3 years. Improving the treatment areas in terms of both the physical space provided and the equipment available has enhanced the overall medical experience. Although there will remain problems which are not predictable, a thorough debrief ensures that, year on year, the service provided continues to get better.

Conclusion

These ongoing improvements have helped to minimise the impact of the Marathon on local resources, and have the additional effect of providing specific marathon related care for runners in an expedited timeframe.


Minors area within a treatment tent

Standardising Medicines Data in NSW Public Hospitals

AUTHORS:

OBJECTIVE

To introduce standardised medicines reference information in a statewide pharmacy dispensing system to improve operational efficiency and as a foundation for integration with electronic prescribing systems.

BACKGROUND

There were 21 different medicines lists in 32 separate databases utilising different pharmacy systems and versions. The technology was standardised and databases consolidated during the implementation of the standardised medicines information. The *Hospital Pharmacy Product List* (HPPL) was the title given to the single medicines list which would be used in i.Pharmacy across NSW public hospitals.

METHOD

Terminology guidelines were developed for all medicines including non-registered and locally manufactured products, in consultation with hospital pharmacists across the state. An existing medicines list was selected and manually aligned to the guidelines. The list was reviewed by hospital pharmacists and the guidelines refined accordingly. The new medicines list was then mapped to each local list and any missing products were added as the project progressed at each hospital. A pharmacist reference group was established to resolve any contentious terminology issues.

DEVELOP EDITORIAL GUIDELINES

Define editorial guidelines for all hospital pharmacy products:
- Commercially traded
- Clinical Trials
- Local Aseptic/Cytotoxic/TPN/ Extemporaneous

BUILD INITIAL PRODUCT LIST

'Cleanse' existing LHD i.Pharmacy product file according to editorial guidelines.

STAKEHOLDER REVIEW

3000+ products reviewed and editorial guidelines refined.

DEVELOP ELECTRONIC SUPPORT TOOLS

- **Product Request Tool**
- **Content Management Tool**
- **i.Pharmacy Integration**

RESULTS

Consistent high-quality medicines reference information is now available in the pharmacy system at all participating hospitals across NSW. A central operational support service manages the medicines reference information according to agreed terminology guidelines and reference sources.

PREVIOUS DESCRIPTION	HPPL DESCRIPTION	RATIONALE
Amoxycillin/Clavulanate (Augmentin Duo 400) 400mg/57mg SUSP. FOR ORAL 60mL	Amoxycillin 400mg/5mL Clavulanic acid 57mg/5mL (Augmentin Duo) Suspension 60mL	• Generic terminology aligned with AMT • Strength identified next to generic in multi-ingredient products • Product forms standardised • Strength expressions standardised • Clinically relevant salts identified
Amox/clav (Augmentin Duo) 400mg/5mL SUSP 1		
Perindopril Arginine / Amlodipine (Coveram) 10mg/5mg Tablet 30	Perindopril arginine 10mg Amlodipine 5mg (Coveram 10/5) Tablet 30	
Perindopril / Amlodipine (Coveram) 10mg/5mg TABLETS 30		
Cholecalciferol / Calcium Carbonate (Ostelin Vit D & Calcium Chewable) 12.5mcg/ 1.5g Tablet (DIRECT) 60	Calcium carbonate 1.5g Colecalciferol 12.5microg (Ostelin Vitamin D & Calcium) Chewable Tablet 60	
Calcium (as Carbonate) + Cholecalciferol (Ostelin Vitamin D & Calcium) 600mg/2.5mcg CHEW TABS 60		

CONCLUSION

The standardised medicines reference information has been used in production pharmacy systems for over 18 months. Although there was initial resistance from pharmacy staff to losing control of the information, our customers are now pleased with the quality of the information and the timeliness of the product request service. Work is now proceeding to develop standardised medicines reference information for clinical systems other than pharmacy.

HOSPITAL PHARMACY PRODUCT LIST (HPPL)

DRUG DESCRIPTIONS
Consistent medicines terminology (AMT / MIMS / ARTG)

CSC i.PHARMACY DRUG CODE
Stockley Drug Interaction and Allergy checking decision support

BARCODES
Scanning during dispensing, receipt and distribution (National Product Catalogue/ Suppliers)

ARTG ID
Generation of CMI leaflets from i.Pharmacy (ARTG)

CONTRACT LINKAGE
Consistent identification of contract items (902 Pharmaceutical Contract)

PBS LINKAGE
Highly Specialised Drugs Online Claiming (Medicare)

WARNING CODES
Cautionary Advisory Labels (APF 22, TGO 80, NSW Poisons and Therapeutic Goods Regulation)

THE HPPL MODEL

HPPL BENEFITS

Medication Safety

- Consistent medicines reference information available to patients and staff across NSW public hospitals via i.Pharmacy
- Regular updates of Stockley drug interaction data
- "One stop-shop" for medication safety initiatives:
  - Child resistant caps and warning labels
  - Tall Man lettering
  - Barcode scanning
- Provides the foundation for:
  - future integration of i.Pharmacy with electronic prescribing systems
  - developing common i.Pharmacy practice across the state
  - defining other state level data sets (e.g. Interventions, sig codes).

Operational

- Reduced i.Pharmacy product file maintenance across NSW
- Electronic product request management process
- Products added to system within hours
- Specialised central group managing state-wide datasets ensuring standards are maintained across the state
- Streamlined implementations of State contract variations
- Support for barcode scanning during dispensing
- Foundation for 'pharmacy data warehouse' to provide an efficient state level reporting capability for:
  - Spend analysis for contract management
  - Drug usage reporting (e.g. antibiotics)
  - Activity Based Funding.

NSW GOVERNMENT | eHealth

Academic integrity standards: Aligning policy and practice in Australian universities

AUSTRALIAN LEARNING & TEACHING COUNCIL

APFEI

Aim

Develop a shared understanding across the Australian higher education sector of academic integrity standards, with the aim of improving the alignment of academic integrity policies and their implementation.

An aligned approach to academic integrity (see East 2009)

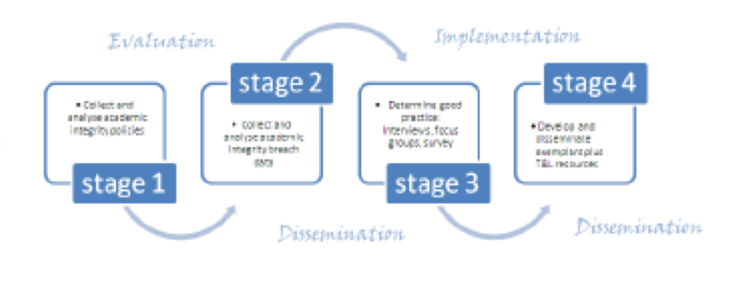
Research questions

1. What are Australian universities' policies and procedures for academic integrity breaches?
2. What responses to breaches of academic integrity are actually implemented in practice?
3. What is good practice in aligning academic integrity policy with teaching and learning strategies?
4. How could a culture of academic integrity be more effectively fostered?

Deliverables

- resources that enable the teaching and learning of academic integrity.
- opportunities for critical reflection, comparison and discussion of policy and practice.
- exemplars of interpretations of policy and procedure.

Project stages



Project progress

- Analysis of academic policies of 39 Australian universities available online completed. Project won award for 'Best Research Paper' at Australian Quality Forum 2011.
- Student survey completed (June-August 2011),15,304 responses from students enrolled at the six project partner institutions received. Results being analysed.
- Majority of focus groups and interviews completed .
- National colloquium in February 2012.

Five core elements

No element privileged over another

Elements interconnected

Strength of the knot

Overarching commitment to academic integrity lies at the heart of an exemplary academic integrity policy

Access: easy to locate, read, concise, comprehensible.
Approach: Statement of purpose with educative focus up front and all through policy. Institutional commitment to academic integrity.
Responsibility: Details responsibilities for ALL stakeholders.
Detail: Extensive but not excessive description of breaches, outcomes and processes.
Support: Proactive systems to enable implementation of the policy.

Preliminary research findings

- 51% of the policies had 'misconduct' and 'plagiarism' as the key terms. 41% had academic integrity as the key term.
- 28% had a mixed approach of *both* educative and punitive elements.
- Only 39% of universities identified the institution as being responsible for academic integrity.
- Only one Australian university said that academic integrity is *everyone's* responsibility.

Reference: East, J. (2009). Aligning policy and practice: An approach to integrating academic integrity. *Journal of Academic Language and Learning, 3*(1), A38-A51.

Acknowledgment: *Support for this project has been provided by the Australian Learning and Teaching Council, an initiative of the Australian Government's Department of Education, Employment and Workplace Relations. The views expressed by this project and in this poster do not necessarily reflect the views of the Australian Learning and Teaching Council Ltd.*

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TECHNICAL CONSIDERATIONS

Session 3: April 2, 2019

Know *before* you begin:

- Conference requirements for poster size, orientation (vertical or horizontal?)
- Does the conference require and provide a specific template, logos, or color scheme?
- SMHS has templates: https://med.und.edu/information-resources/branding-and-templates.html

Basics:

- Important text readable from 10 feet away
- Total word count under 1000 words
- Common, professional fonts and coloring

MINIMUM FONT SIZES:

✓ Heading text: 36 pt
✓ Body text: 24 pt
✓ Table and chart labels references, and other minor text: 14 pt

CONCLUSION

GOOD POSTER DESIGN	NEEDS IMPROVEMENT
Flows in a readable way, following expected format for conference, field, and country	Hard to determine where to look; Does not follow a logical or expected format
Large, clear text concisely stating the important points	Small, overly detailed text (such as paragraphs copied directly from the research article)
A few purposefully chosen, easy-to-understand multimedia placed with relevant text No irrelevant images/clip art	Images placed away from relevant text, or too detailed for the format of the session Irrelevant images and ”seductive details”
Professional, consistent fonts and consistent, well-contrasted coloring throughout	Several different fonts; “funky” fonts; clashing or poorly contrasting colors
Makes use of consistent, defined white space for all components	Components are not consistently spaced; white space is bigger, smaller, or nonexistent in some areas
No typos	Contains typos, errors

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