English Language Support Service

Don’t do what I say
Do what I do!

Nola Dennis

Loughborough University

Learning together

- Students' assessed coursework
- Engage with the students
- Help them to improve their coursework assessment for one module

Overview

- Overview of module & coursework
- What I did
- Example materials
- My Reflection

Module

- China Partnership Programme students (3+1+1)
- 2 x Credit bearing modules
- English Language 1 and English Language 2
- English Language 2 (semester 2)
- 2015 – 2016 academic year
- In progress 2016 – 2017 academic year

Module Coursework

Individual Presentation

- 25%
- A presentation on an aspect of technology
- 5 -6 minutes

Literature Review

- 25%
- 1,400 - 1,800 words

Literature Review and Presentation

Technology:

Literature Review:

Topic:

Specific Focus:

Presentation:

Topic:

How it works:

Evaluation:

The Problem

- Module coursework:
  - Changed the coursework (no examples from previous years)
  - Guidelines (you think are clear)
  - Students can struggle to follow the guidelines / ask a lot of questions / need additional guidance
  - Students want/need to see models of what is required

The Solution

- Complete the coursework assessment myself for the module
- Helped to develop teaching materials
- Helped guide the students through the process of producing their coursework

Aims of the Literature review

- Researching a topic through reading
- Summarising, paraphrasing, quoting and synthesising from a number of sources
- Analysing the views/arguments of others
- Writing correctly formatted ‘references’
- Writing in appropriate academic style
- Following layout instructions
- Proofreading and editing your writing

Task details

- Explore chosen topic in depth
- Overview the main themes associated with your chosen technology
- Focused (narrow the scope).
- Requires synthesis, analysis and evaluation of the sources identified
- The Literature should have a clear thesis statement.
- Minimum of 3 academic sources

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My process

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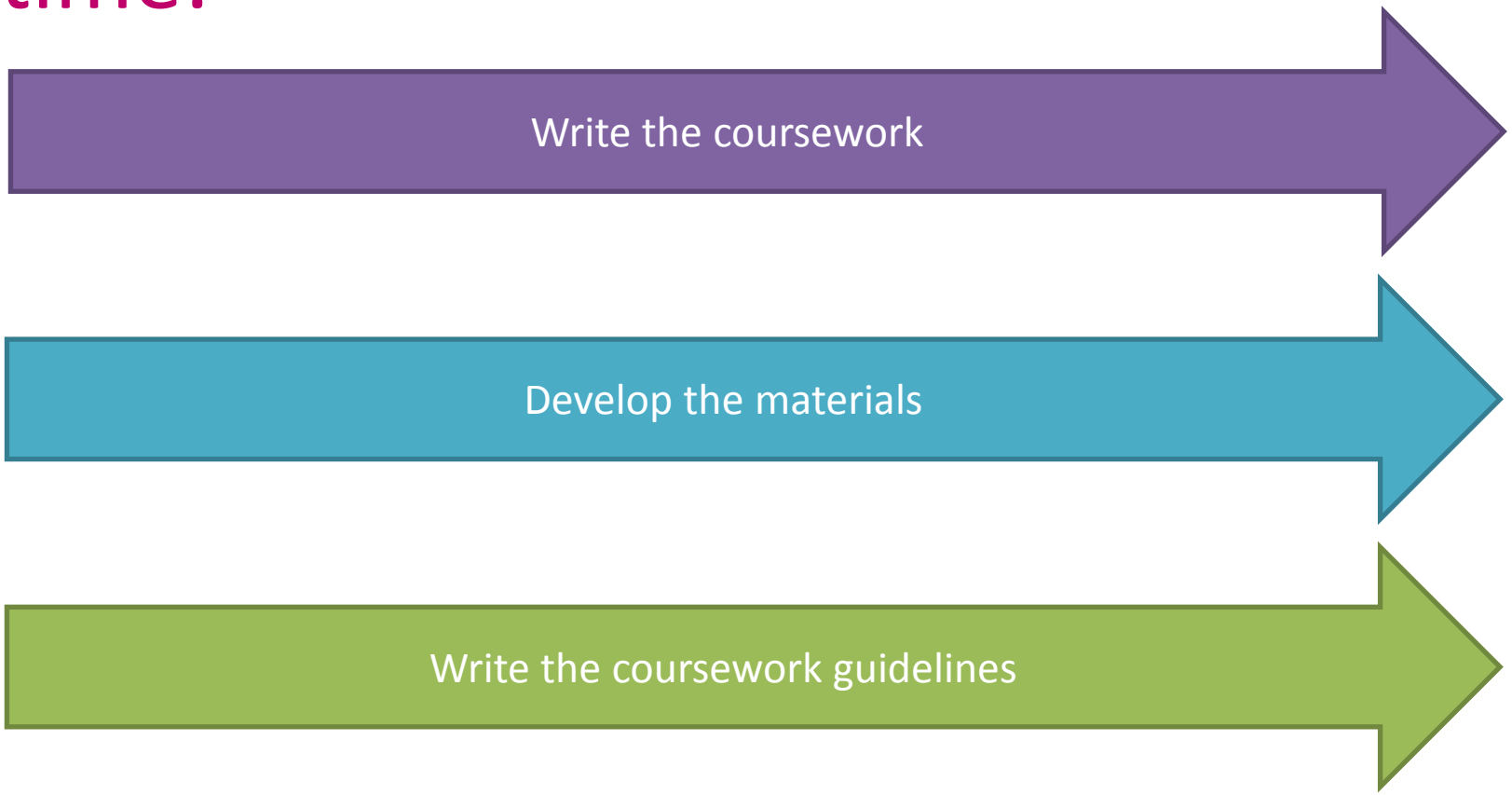
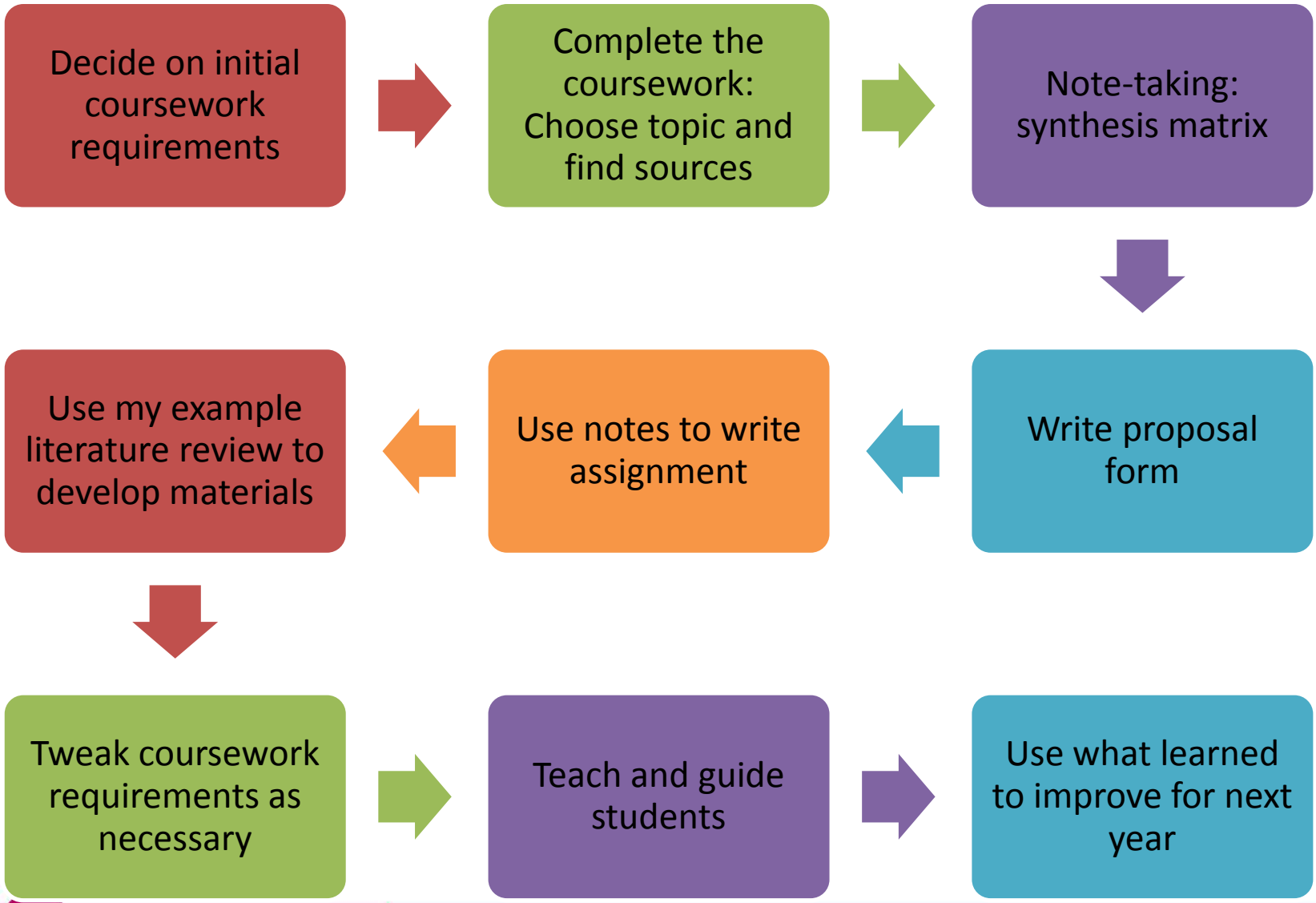
Three things happening at the same time:




Decide on initial coursework requirements
Complete the coursework: Choose topic and find sources
Note-taking: synthesis matrix
Write proposal form
Use notes to write assignment
Use my example literature review to develop materials
Tweak coursework requirements as necessary
Teach and guide students
Use what learned to improve for next year

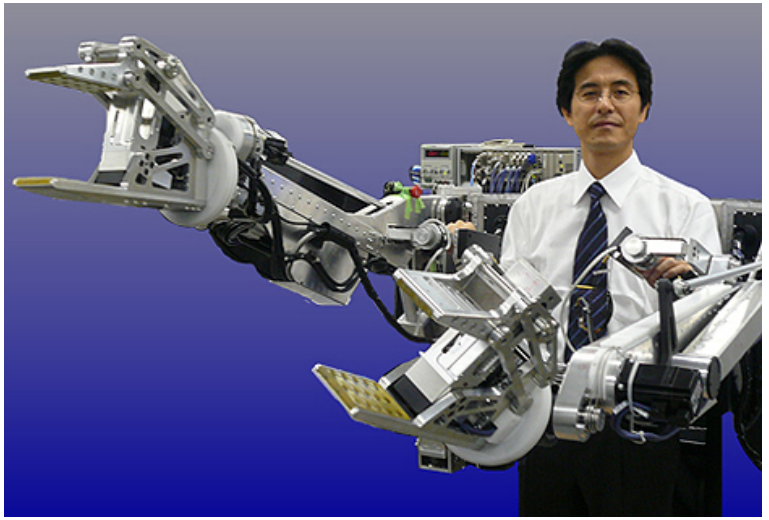

energy
battery
solar panels
electricity
power
what they're made of
inside
how they move
detect intruders
building site
car industry
Robots
how they're made
log
themselves
wheels
move
other things
talk?
grab
clutch
what they do
sewing
movement
light
computer
smell
control
person
control panel
what they're used for
space
moving heavy things
disarming bombs
train doctors & nurses
play games
Medical applications

Narrow down your Topic:

- What are some of the uses of robots in health care?
  - Robot-assisted surgery
  - Exoskeletons help disabled walk again
  - Robotic nurses or companions for the elderly
  - Carry people and equipment
  - Others
- Narrow down to a specific use or specific type of robotics:
    - Robotic exoskeleton

Some research questions:

- Robotic exoskeleton:
  - How is it used in health care? More than one application?
  - What are the benefits?
  - Are there any drawbacks?



Literature Review and Presentation

Technology:

Robotic exoskeletons for human use

Literature Review:

Topic: Medical Applications of robotic exoskeletons

Presentation:

Topic: HAL5 Exoskeleton

- How it works
- Evaluate its effectiveness

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Note taking

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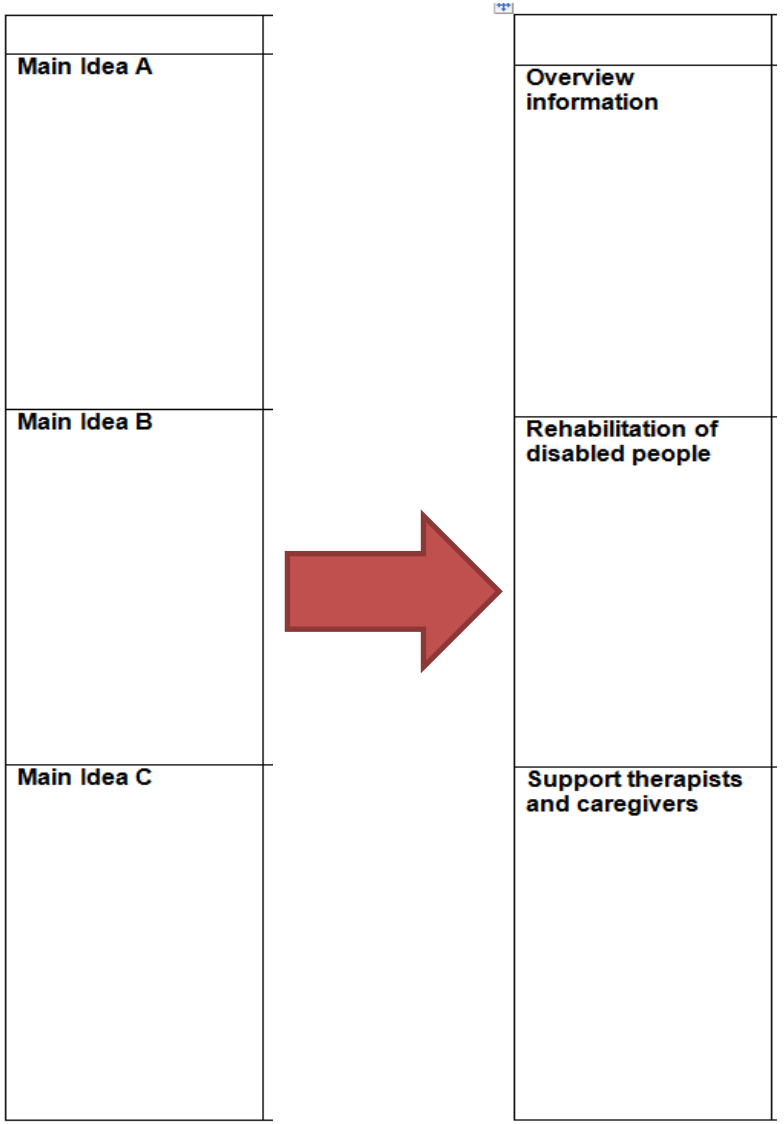
Note-taking: Synthesis Matrix

- Method I used
- Helps organise Literature Review by **themes**
- Made it compulsory for students
- Hand in and receive feedback

Identify themes

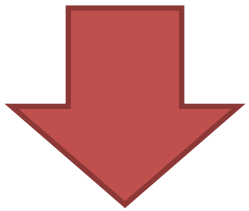
- Skim read your sources to identify common themes throughout
- List your main themes down the vertical column
- Look back at your brainstorm and research questions – what did you identify as your main focus?



Identify your main sources

- List the main sources that you intend to use along the top row of the matrix:

Source 1	Source 2	Source 3	Source 4	Source 5



Mikolajewska & Mikolajewska, 2011	Eisinger, 2015	Bogue, 2009	Pacific Prime's Blog, 2011	Nilsson et al., 2014

Reading and Note-taking

- As you read your article, highlight key information that is relevant to your literature review themes:

Emilia Mikołajewska[1], Dariusz Mikołajewski[2]

Exoskeletons in Neurological Diseases – Current and Potential Future Applications

Egzoszkielety w terapii schorzeń neurologicznych – zastosowania obecne i przyszłe

[1] Rehabilitation Clinic, Military Clinical Hospital No. 10 and Polyclinic, Bydgoszcz, Poland
[2] Division of Applied Informatics, Department of Physics, Astronomy and Applied Informatics, Nicolaus Copernicus University in Toruń, Poland

Abstract

An exoskeleton is a distinctive kind of robot to be worn as an overall, effectively supporting or, in some cases substituting for, the user's own movements. The development of exoskeletons can lead to important changes in the rehabilitation of disabled people by introducing an alternative to wheelchairs. Exoskeletons can be an efficient tool in gait re-education and in the restoration of upper limb functions, and they can support therapists and caregivers in tasks that require major physical effort. The functionality of exoskeleton can easily be extended by a "disabled person integrated IT environment", described by authors. Exoskeletons can also be easily adapted to the needs of severely ill or aged people (**Adv Clin Exp Med 2011, 20, 2, 227–233**).

Key words: neurological diseases, rehabilitation, robotics, exoskeleton, hospital care, home care.

Streszczenie

Egzoszkielet to szczególny rodzaj robota zakładanego na użytkownika w formie kombinezonu skutecznie wspomagającego lub, w wybranych przypadkach, zastępującego jego ruch. Rozwój egzoszkieletów może doprowadzić do zmian w rehabilitacji osób niepełnosprawnych dzięki wprowadzeniu alternatywy dla wózków dla osób niepełnosprawnych, wykorzystanie egzoszkieletów jako skutecznych narzędzi do reedukacji chodu i czynności kończyn górnych oraz jako wsparcie terapeutów i opiekunów osób niepełnosprawnych, ciężko chorych i w podeszłym wieku przy wykonywaniu czynności związanych ze znacznym wysiłkiem fizycznym. Funkcjonalność egzoszkieletu może zostać zwiększona dzięki włączeniu go w przedstawione przez autorów „zintegrowane środowisko teleinformatyczne osoby niepełnosprawnej". Prezentowane rozwiązania mogą w łatwy sposób być przystosowane do potrzeb osób ciężko chorych lub w podeszłym wieku (**Adv Clin Exp Med 2011, 20, 2, 227–233**).

Słowa kluczowe: choroby neurologiczne, rehabilitacja, robotyka, egzoszkielet, opieka szpitalna, opieka domowa.

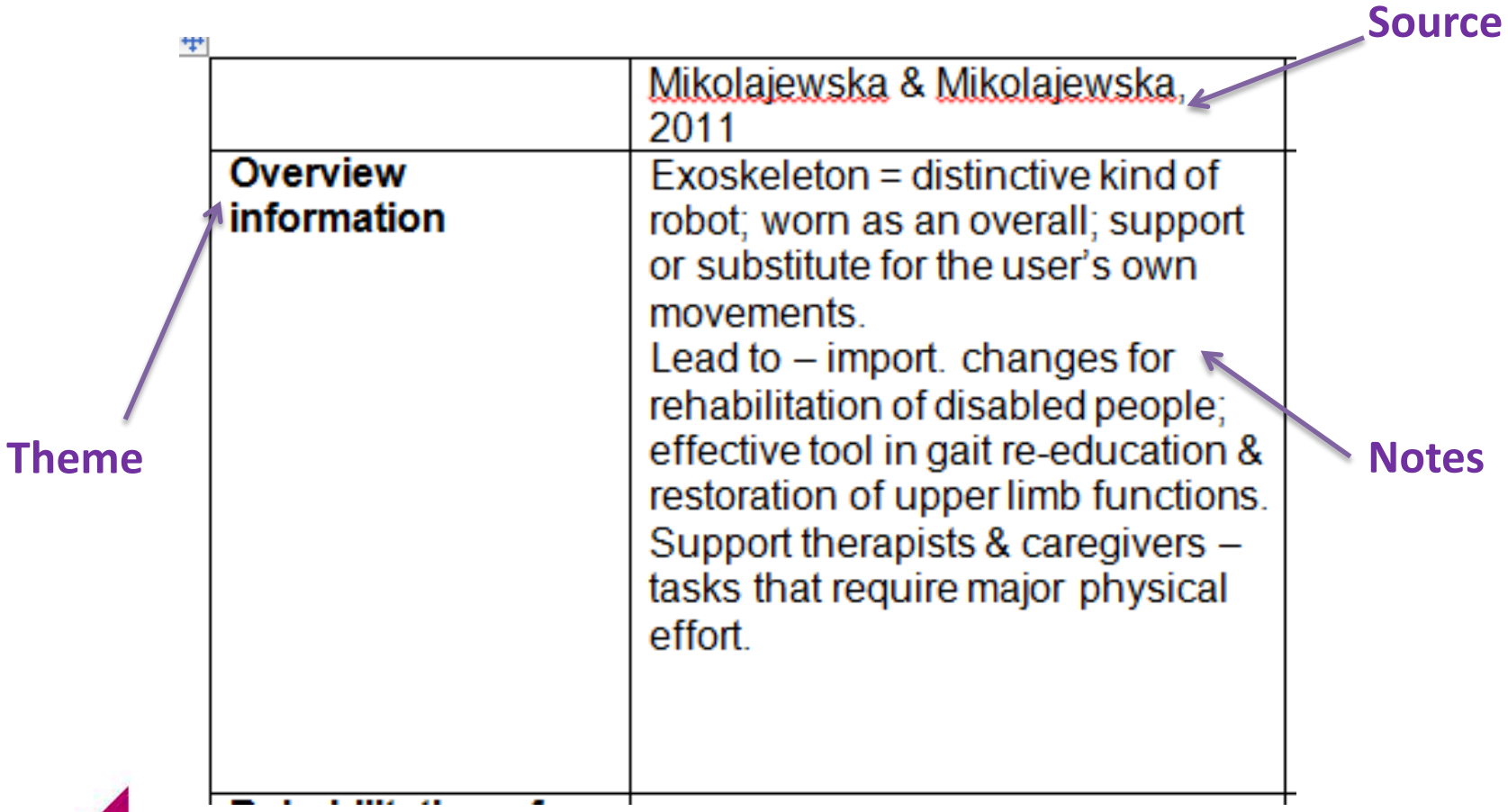
An exoskeleton is a distinctive kind of robot to be worn as an overall or frame, effectively supporting, or in some cases substituting for, the user's own movements [1–4]. The aim of this article is to discuss the possible use of exoskeletons in the treatment of neurological diseases, including neurorehabilitation. The authors have reviewed publications in the *PubMed* database (Figure 1); the keyword "exoskeleton" does not occur in the MeSH database.

Exoskeletons are still at the early stages of their development. They need detailed technical and clinical research not only in the area of safety, but also in terms of their influence on the human body, biomechanics and mind. It seems that in the future exoskeletons may become a form of therapy in neurological diseases and neurorehabiltiation.

Exoskeletons can be divided into two categories: those for all four extremities (arms/legs) and those for the lower extremities only.

Exoskeletons are controlled by the user's movements and do not need any external control terminal (with the exception of a service terminal). The main parts are: the frame; the power system, including engines, actuators and batteries; and the control system with sensors.

Make notes on your matrix



	Mikolajewska & Mikolajewska, 2011
Overview information	Exoskeleton = distinctive kind of robot; worn as an overall; support or substitute for the user's own movements. Lead to – import. changes for rehabilitation of disabled people; effective tool in gait re-education & restoration of upper limb functions. Support therapists & caregivers – tasks that require major physical effort.

Student Example 1

Bronwen

Notice: Sorry I didn't paraphrase for the following content, because it would make it easier for me to locate it back for further use.

China Partnership Programme: English Language 2

Literature Review: Synthesis Matrix

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Topic: _____Application of 3D printing in fashion industry_____

	Biehler & Fane, 2014	Gebler, Uiterkamp & Visser, 2014	Hoskins, 2013	Perkins, 2014	Weller, Kleer & Piller, 2015	Yap & Yeong, 2014
Overview Information	★ Three types: deposition, fusion, stacking up. Pp.20-21	Define 3DP=manufacturing process+ fabricates layer by layer+ digital blueprint	Pictures describing making complex jewellery based on geometry and mathematics		Colloquial version of AM (additive manufacturing), join materials from 3d model data Benefits of rapid prototyping: increase flexibility, shorten time to market, lower development cost...	★ SUMMARY of AM TECHNICHES-for 3dp garments;pp.196 FDM/SLS; for jewellery pp.197 SLM/SLA/DLP; Complex consumer products without use of tooling;
Freedom of designing and creating		Design towards complex and improved geometries; Not constrained by technological limitations; But limited number of materials—not so free;	Creating new aesthetics for complexity; But you can doesn't mean you have to!	Produce very complex shapes that can be represented mathematically but cant be manufactured with conventional approaches	AM enables customers to co-design—result: product variety can potentially become infinite without additional cost in manu; Acceleration and simplification of product innovation; little design constraints-solely limiting to designers' creativity and physical laws	★ Design and creativity are two key features of fashion industry AM provides greater freedom-impossible to fabricate/ conventionally+ experiment out-of-the-box design; Freedom of design: design process+ data capturing+ modelling tools The use of CAD; KEY DESIGNER
Revolution for manufacturing		Increase supply chain dynamics, reduce time-to-market; More localized compared with raw production-spatially bound to reserve; Total impact of 3dp on industrial manufacturing by 2025 is quantified rather small; Training and education in digital manufacturing		Factory staff—primarily focus on monitoring printers	★ AM enables production functionally integrated product design in one-step; High manu flexibility, produce in any random order without cost penalty; Low production throughput speed+ skilled labor strong experience needed; Fewer production steps, lower manual intervention	SLS (selective laser sintering)-Iris Herpen-black gown; polymers or polymer composites-lighter and relatively more flexible=comfort apparels
Economic and environmental friendly		★ Manufacturing-related energy demand and CO_2 emission lower up to 75%; Requires material ends up in printing good; Cost-effective in five key markets—consumer products;		Factory resets- quicker and easier, instead of costly production-line retooling	COUNTER: high marginal cost of production= raw material cost + energy intensity	
Evaluation and conclusion	Third version umcommon. Fusion-more possibility, when making thing with no support Deposition-round, hollow, intact objects	Change social and labour structure due to high automation—shift localized means of production; Beneficial effects for aging society/ unemployment and social insecurity in developing country;	We are still at early stages in searching the aesthetics in 3dp	Centralized manufacturing in large plants- keep cost down, but model uncompetitive against high logistics cost+ increased customer expectation	Material limits+machine/physical limit+ quality issues+ difficulty for non-experts; Cost advantages of low-wage countries might diminish in long run; Intellectual property rights& warranty related limitations; need more advanced AM machines=less defective batches+ higher capital investment	But protect fashion items under copyright-if design easily replicated on home 3dp; 3DP jewellery gained more acceptance than garments, cuz available material= printers vatered for jew/manu; still costly and challenging order full size printed apparels; improve needed in making wearable textiles for daily use;

Student Example 2

China Partnership Programme: English Language 2

Jamie Ji

Loughborough University

Literature Review: Synthesis Matrix

Topic: _____3D Bio-Printing Technology_____

	Lee VK & Dai G, 2015	Amer B. Dababneh & Ibrahim T. Ozbolat, 2014	Ibrahim T. Ozbolat, 2015	Natalie D. , 2014	
Overview of Current Bio-printing Technologies **+ Evaluation**	Bio-printing: also called organ printing - an advanced form of 3D printing. Inkjet-based:a noncontact technique – (advantages)of low cost, readily available, and have high print speeds. (disadvantages) the lack of precise directionality and size control of droplet and biomaterials etc. Microextrusion: (advt) convenient/ simple to construct / affordable. (disadvt) tends to kill the cells during the printing process. Laser-assisted: uses the energy of pulsed laser.(advt)is able to produce relatively higher resolution patterns.(disadvt) lower cell viability in the printed hydrogel in comparison to other inkjet mechanisms.	Bio-printing : an emerging technology for constructing and fabricating artificial tissue and organ constructs./ a recent innovation that simultaneously writes living cells and biomaterials layer by layer to fabricate living tissue constructs. 3 sequential technological process steps: pre-processing, processing (actual printing), and post-processing. Inkjet-Based: Inkjet bio-printers are relatively cheap and can work under mild conditions./ the main restrictions is the low upper limit for viscosity of bio-ink. Laser-Based: (limitations) cell viability in laser-based bio-printing is lower than that of inkjet-based bio-printing.	In vitro Bio-printing: living tissue constructs or cell laden scaffold in vitro has been well studied. In Situ Bio-Printing: can enable the growth of thick tissues in critical defects with the help of vascularization driven by nature in lesions./ (history)first proposed by Weiss using inkjet technology / (evaluation) is challenging, and further systematic research is required to take the technology into a robust state. It can sometimes increase the duration and cost of surgery. (Future Trend)It could be considered for humans and it will one day enable the repair of body parts directly in patients in operating rooms.	History: The University of Toyama Professor Makota Nakamura - adapted the inkjet technology to create a bio-printer that produced bio-tubing similar to a blood vessel in 2008. In Situ Bio-Printing: Doctors can potentially scan wounds and spray on layers of cells to heal patients in this procedure	
Bio-printed Tissues and Organs **+ Evaluation**	Biomaterials: two primary categories. (1) Curable Polymers. Forming mechanically robust and durable materials after solidification, providing structure and scaffolding to printed constructs. (2) Soft Materials. Generally with high water content, inside of which cells are capable of residing. (Bone) An anatomically shaped scaffold can be created to match the actual defect of patients based on the medical imaging data. / (Skin) In skin injuries, autograft, allograft, wound dressing, and tissue-engineered substitutes are the current treatment choices. / (Vascular) Bio-printing is combined with other micro-technologies and materials to form vascular channels.	Biomaterial / Bio-ink: Hydrogels & hydrogel-free Cell Aggregates. bioinks differ from each other, in that different bioinks have different mechanical properties, gelation methods and other bioprintability characteristics. (Evaluation) it is important to be aware of these characteristics in order to implement the appropriate bioink for various bioprinting techniques. Bioprinter : (Evaluation)An affordable and high-resolution bioprinter that can control the dispensing of multiple bioinks with different viscosities is an important accomplishment and will definitely enable and enhance further developments in biofabrication technology.	Whole-organ bio-printing: (Evaluation)has remained elusive due to several limitations associated with biology, bio-printing technology, bio-ink material, and the post-bio-printing maturation process. [Recent approaches] to the bio-printing scale-up of functional tissue and organ constructs for transplantation: in vitro & in situ bio-printing technology.	Process - innovative and simple. Organs and other body parts have already been printed and transplanted into patients. E.g.: a bio-printed heart saved the life of a child in February 2014. As the cells used to create that organ are drawn from the patient, the risk of the body rejecting the transplanted organ are very low. Bio-printers: have the capability to print organs or body parts which include bones, tissues, skin, cartilage, and stem cells. The machines are all different because each machine is made for a specific organ or body part. e.g.: NovoGen MMX (presently in use)	
Regenerative Medicine Applications and Challenges **+ Evaluation**	has great potentials to 1) create fully functional replacements for damaged tissues in patients and 2) rapidly fabricate small-sized human-based tissue models or organoids, for applications in diagnostics, disease modelling, and drug development. [Evaluation]A promising technology to revolutionize medicine./ Very successful in making biomaterial scaffolds. / It is becoming an important enabling technology for tissue engineering. [Challenges] Current choices of printable biomaterials are very limited.- needed to develop new biomaterials.	This emerging technology appears to be more promising for advancing TE toward functional tissue and organ fabrication for transplantation, ultimately mitigating organ shortage and saving Lives. [Challenges] Developing a standardized scalable fabrication method for the robotic delivery of cells is still a challenge. Future Trends: 4D bio-printing can be considered a promising direction in the fabrication of living tissues in a shorter period of in vitro culture time.	Cancer or disease modelling. It offers great precision for the spatial placement of cells, proteins, genes, drugs, and biologically active particles to better guide tissue generation and formation. [Evaluation] Bio-printing is an emerging field that is having a revolutionary impact on the medical sciences. [Challenges] the lack of growth factors far from the defect periphery - needed to induce differentiation of printed stem cells or progenitor cells that migrate from the host tissue.- can be overcome with gene therapy	Provide relief to the hundreds of thousands waiting for organ donations. It could revolutionize surgeries and prolong life expectancy. [Evaluation]The developments in 3D bio-printing show a great potential and once more research and trials are conducted, these developments could lead to a medical revolution. / Several negatively impacted industries due to 3D bio-printing: E.g. The kidney dialysis industry. Organ replacement logistics (UNOS) and transportation	

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Matrix → Literature Review

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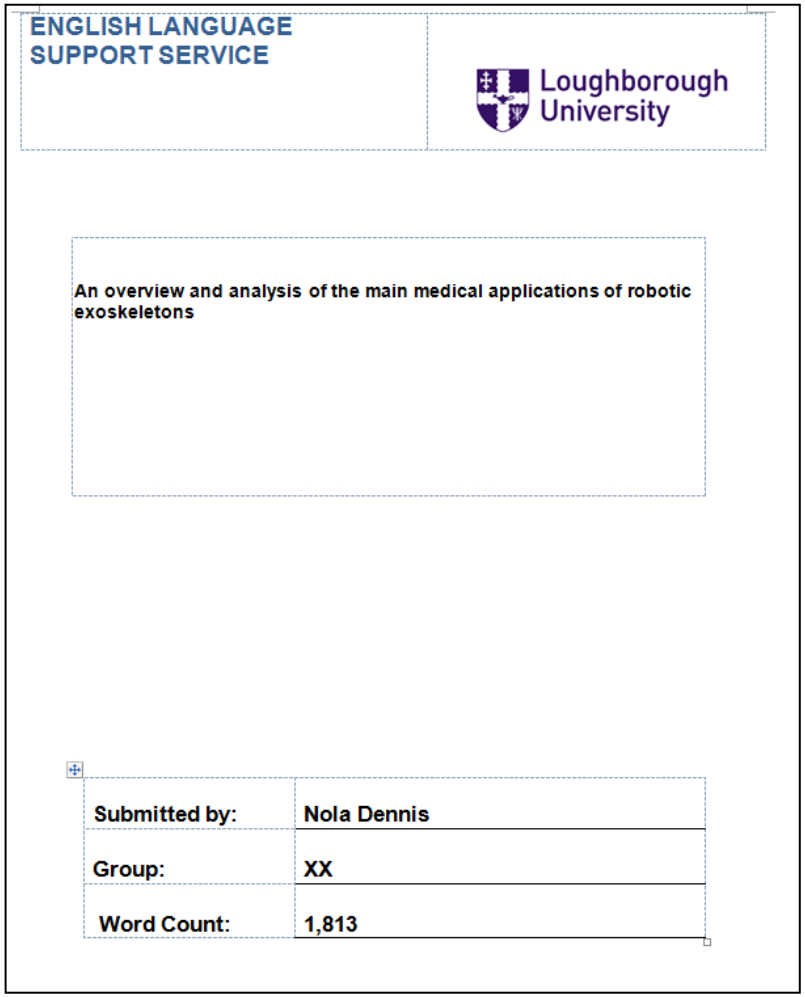
Next step: Writing

My chosen method:

- Use notes to write literature review:
  - 1 theme = 1 paragraph
  - Avoid 1 source = 1 paragraph
- Students encouraged to:
  - cite sources correctly
  - include evaluation & comment (voice)

Materials Developed: Example Literature Review

An overview and analysis of the main medical applications of robotic exoskeletons



ENGLISH LANGUAGE SUPPORT SERVICE

Loughborough University

An overview and analysis of the main medical applications of robotic exoskeletons

Submitted by:	Nola Dennis
Group:	XX
Word Count:	1,813

Example material my literature revi

Example literature review

Task 1: Introduction

Read the introduction and identify the features from be

outline	thesis statement	
reason for research/justification		

Task 2: Read the main body of the example Literature Review and answer the questions below:

1. Make brief notes on the main theme of each main body paragraph, the writer's opinion and note which sources are referred to in each paragraph:

Paragraph	Theme	Sources
Paragraph 1	Opinion:	E.g. *National Stroke Association (2016)*
Paragraph 2	Opinion:	
Paragraph 3		

2. For each paragraph identify:
   - The main claim(s)
   - Supporting evidence
   - Writer's voice

3. What do you notice about the use of sources in a literature review? How should sources be used?

Student Analysis

2. For each paragraph identify:
   - The main claim(s)
   - Supporting evidence
   - Writer's voice

second medical and caregiving use for exoskeletons is as a substitute to using a heelchair. According to the English Federation of Disability Sport (2016) the UK has proximately 1.2 million wheelchair users; that equates to approximately 2 percent of e population. Wheelchair bound people could benefit from wearing an exoskeleton an 'upright alternative to the wheelchair' (Bogue, 2009, p425). The ReWalk is one ample of an exoskeleton that can be used as an alternative to a wheelchair (Bogue, 09). The ReWalk was developed by Argo Medical Technologies in Israel as a botic ambulation unit for wheelchair users' (Bogue, 2009, p425). It is a lightweight it, which incorporates crutches to provide stability for the wearer (Bogue, 2009). It orks by way of algorithms that analyse the upper-body motions of the wearer; the it then uses the data to 'trigger and maintain gait patterns and other operations ch as climbing stairs and shifting from sitting to standing' (Bogue, 2009, p425). The al of the ReWalk suit is to improve the quality of life for wheelchair users. In fact, kolajewska and Mikolajewska (2011) agree that this particular use of an oskeleton can significantly change the lives of disabled people, stating that it can lp improve their quality of life including providing more independence and portunity to engage in education, work and entertainment. Furthermore, ikolajewska and Mikolajewska (2011, p230) explain that 'using an exoskeleton is oser to natural human mobility than using a wheelchair'. This more natural state for

The third application in the field of medicine and caregiving for exoskeletons is their use to enhance the strength and agility of physically fit wearers. This application falls into two categories: firstly, increase the strength of caregivers and, secondly, increase the mobility and strength of the able, but frail wearer. These applications were the original aims of the HAL5 exoskeleton. In regard to the first use, the HAL5 'helps double the weight someone can carry unaided' (Pacific Prime's Blog, 2011). A support therapist or caregiver wearing an exoskeleton would be able to lift and move a patient without the need of additional apparatus such as a lifting device. This application may be preferable for many patients rather than being lifted by a crane or a robot; it would be a more personal experience for the patient. Additionally, elderly, but able people may be able to wear exoskeletons to help support their frail spouses and reduce the risk of injury to themselves (Bowdler, 2014). The second strength enhancing application has, perhaps, even more potential. With the percentage of over 65s worldwide due to surpass 35% by 2050 (Bogue, 2009, p424), it is essential to keep elderly people fit and healthy for as long as possible in order to reduce pressure on healthcare systems. Wearing an exoskeleton can increase both the mobility and dexterity of the world's elderly population (Bogue, 2009; Mikolajewska and Mikolajewska, 2011). For example, the exoskeleton can help an elderly person to climb the stairs (Mikolajewska and Mikolajewska, 2011). One example is the 'Walking Assist' device currently being developed by Honda, which aims to help 'people with weakened leg muscles who are capable of walking on their own and manoeuvring on their own but who would benefit from additional leg and body support while performing tasks such as climbing stairs' (Bogue, 2009, p.424). Another example is an exoskeleton which is being developed by the Tokyo University of Agriculture and

Technology; it will 'assist less-able farmers with physically demanding tasks such as uprooting crops, tiling soil, and planting trees' (Bogue, 2009, 424). This usage could be particularly important in a country such as Japan where people aged 65 years or older comprise nearly half the number of agricultural workers (Bogue, 2009). It would appear that for countries with a growing proportion of elderly people, exoskeletons could keep a significant proportion of the population mobile and independent for longer. Indeed, according to Bowdler (2014) Rich Walker from the Shadow Robot Company stated 'exoskeletons have a really important role in keeping older people active and healthy for longer, whether at work or at home'. Exoskeletons could, therefore, be vital in aiding elderly people to maintain a more active lifestyle and thus retain more independence. Keeping elderly people active and living in their own homes for longer could potentially save money. For instance, in the UK in 2009 the NHS spent £4.23 billion of its annual budget on social care for the elderly (Hill, 2010). It appears that this usage is one that needs to be investigated further to determine the

1 theme = 1 Paragraph

Rehabilitation of disabled people **Evaluation**	HAL5 can be used for rehabilitation of patients – had stroke or spinal cord injury Efficient supplementary tool in gait re-education & restoring upper-limb functions. Perceived as prob more effective than the traditional assistance and support of therapists and rehabilitative devices Nearly all day wearing exoskel = efficient – nearly natural functions – many advantages – muscle strength, bone density; posture and movements better for digestive, respiratory systems	HAL cleared for use as medical apparatus for patients with brain & neuromuscular diseases by EU The suit uses an advanced nerve-sensing system. When a person moves a limb, an electrical impulse is sent from the brain to the muscle. These impulses can be detected on the surface of the skin. A computer digitises the signals and sends the information to the HAL suit	HAL5 uses sensors on the wearer's skin to detect myoelectric signals (voltages from the signals sent from the brain to the muscles). = faster response of the suit. Advantage of myoelectric sensing = 'allows people suffering from spinal cord injuries or with paralysed limbs to use the suit'.	Gait training – after stroke 'Accumulated evidence indicates that early onset, intensive, repetitive task specific training may accelerate functional restitution after stroke and improve final motor outcomes' Exoskeletons benefit over treadmills, e.g. Lokomat – attached to patient. Exoskels – for lower limbs = joints match patient's lower limbs Recent review (Cochrane) 'electromechanical-assisted gait training in combination with physiotherapy after stroke increased odds of participants becoming independent in walking'; most when applied in 1st 3 months. Several trials and research studies cited – safe, but need to be used by experienced physiotherapists as part of inpatient programme Training 'well tolerated by the patients, with no adverse effects. 'All patients improved their walking ability during the training period'	Swiss company Hocoma offers a therapeutic device called the Lokomat – robotic trousers worn by the user while on a treadmill. To help patients who have had a stroke to improve their walking.

Firstly, exoskeletons can be used as an aid in the rehabilitation of patients who need to learn to walk again, known as 'gait' training. Many patients who have suffered a stroke or had damage to their spinal cord spend many laborious and often painful hours undergoing physical therapy in order to re-train their muscles and brain how to walk. For example, 'every year, more than 795,000 people suffer a stroke, a "brain attack" that occurs when blood flow to an area of the brain is stopped or severely reduced' (National Stroke Association, 2016). Such injuries can result in impaired leg movement or even the loss of leg function. The exoskeleton can, therefore, aid in the rehabilitation of such patients. Two exoskeletons are currently being used for this purpose: the Lokomat (Mehrholz, 2013) and Hybrid Assistive Limb, known as HAL5 (Bogue, 2009; Kashyap, 2014; Nilsson et al., 2014). However, the HAL5 (developed by Japanese company, Cyberdyne) appears to be the most sophisticated on the market. The suit works by sensing the myoelectric signals that are sent from the wearer's brain to the muscles (Bogue, 2009). The suit's built-in sensors on the surface of the skin detect these, often weak, signals and interpret them as movement (Bogue, 2009; Kashyap, 2014; Eisinger, 2015). This appears to be a very effective method for patients who have lost their ability to walk as it can re-train the brain. The Walk Again Center website (n.d.) claims that 'impulses from the leg muscles are sent ...

Overview some key aspects of writing

- Students brought writing to class
- Review:
  - Introduction and conclusion
  - Thesis statement
  - Paragraph organisation (claim, evidence, voice)
  - Paraphrasing and summarising
- Applied to own writing

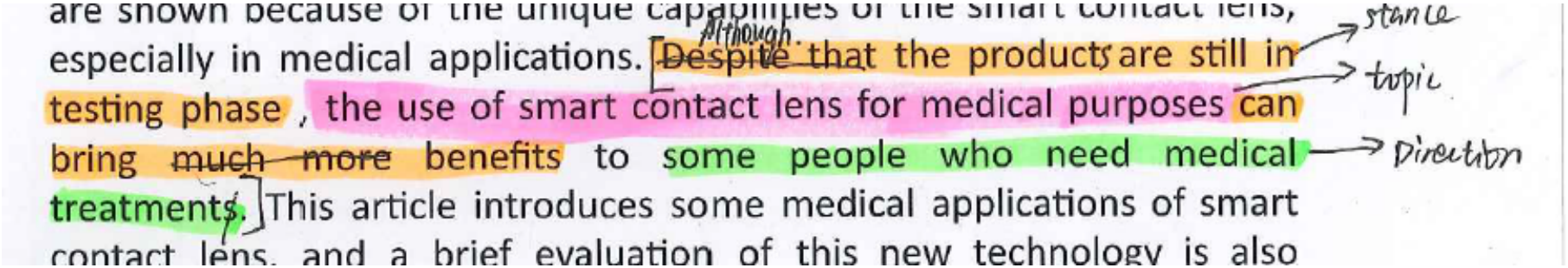
Example

- Identify:
  - Focus
  - Stance
  - Direction

Notwithstanding the serious cost implications, the use of exoskeletons for medical purposes has significant potential for some of the most vulnerable people in society.

I now know the assignment is going to include information about this group of people

Student evaluation of their writing:



Review of process

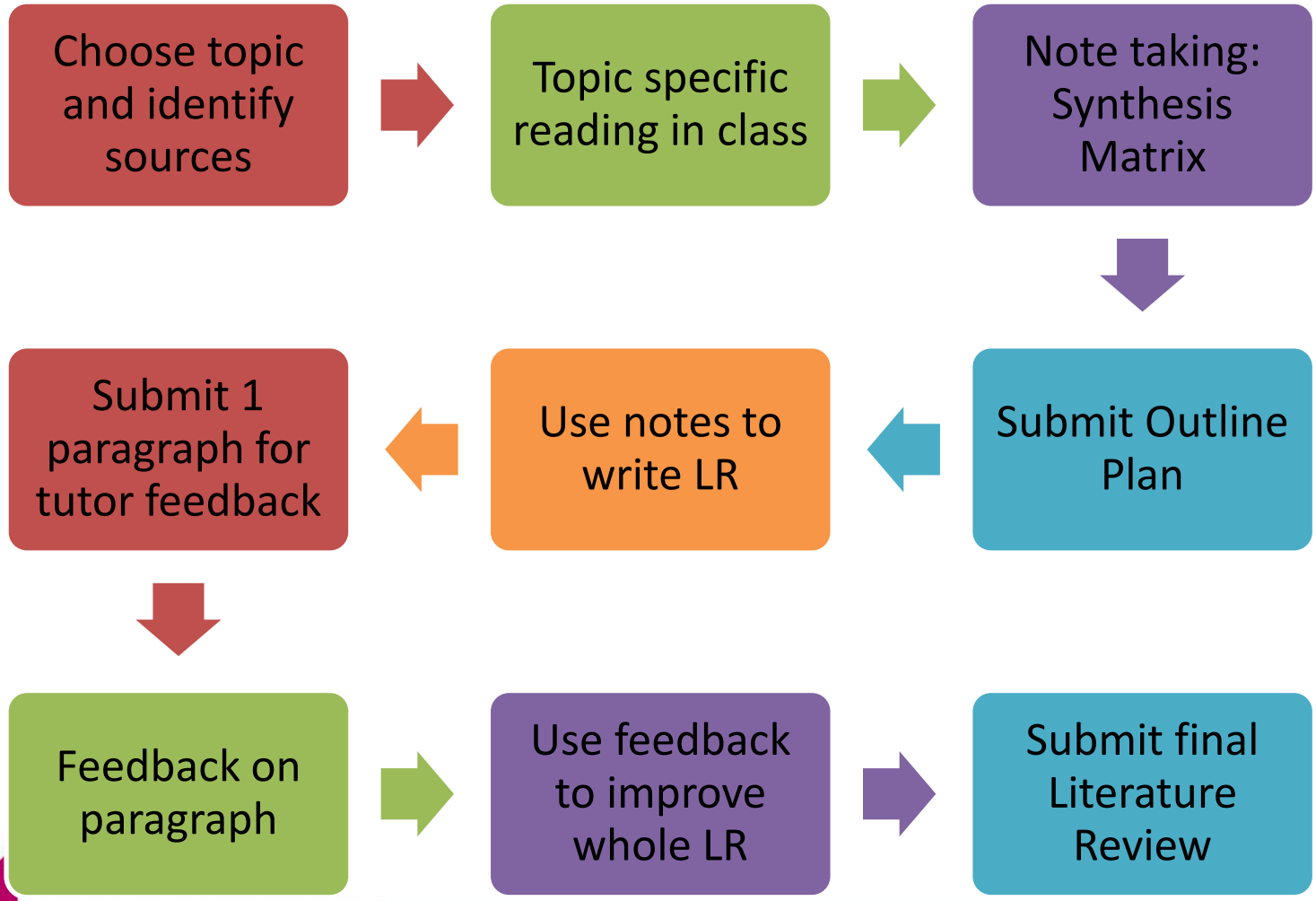
- A method to guide students to analyse their own writing
- You can guide them to best practice (tell them your tips / techniques from experience)
- “Do what I do” – students follow too closely?

Student Feedback

“ i just finished my synthesis matrix and it really helped in organising ideas from different articles! thank you for include it as part of our course!”

“At the beginning of my PhD life, it is essential to do the literature review of the research topic and manage the materials of papers. During the final year of my undergraduate, I attended the China Partnership Programme English Language modules which gave me lots of guidance towards my current PhD studying and improved the capacity of my academic English. I would like to express my gratitude to my teachers towards their professional teaching and kind help.”

Updated Planning and Writing process



Civil and Building Engineering

Make notes on your matrix:

	Klein (1993)	Zimmerman and Whittaker (2000)	Groves (1999)	Andrews (2012)	Gava and Greene (2004)	Bange (2013)
History of good faith	'bona fides' = Latin term for good faith. USA, Australia & much continental Europe – use concept of good faith – basis of legal system. Rely on it to close loopholes in the law	Allowed judge discretion in cases where gaps in the law covering the issue under judgement. English law – different, does not impose a general duty to "negotiate or perform contracts in good faith" (p.39) Example – good faith terminology used in the European Directive of Unfair terms in Consumer Contracts	"The political and social upheavals of the nineteenth and twentieth centuries have had an inevitable impact on the evolution of English contract law, leading to an emphasis on the promotion of trade, and hence commercial certainty in contracting." (p.265)	Good faith = v. difficult to define because of its versatile nature. Can be applied in different ways depending on scenario. Good faith already included where required – e.g. insurance law	Industry – less likely to use courts if they include good faith as this would make the prediction of judgements more uncertain.	The inclusion and enforcement of express good faith terms in contracts in industry – shows positive attitude to good faith being included in law.

Page number for direct quotations

Put into own words as much as possible: summarise & paraphrase

Reflection

- Time consuming process
- Engage with the students
- More effective guidance
- “We are in it together”

What I learned (or remembered):

- Time needed to find sources and make notes