Day 1 Session 2/3

9.2.2 Programme Objectives

ED 106 Interpreting Curriculums

CURRICULUM IS A COMPREHENSIVE PLAN FOR ANEDUCATIONAL/ TRAINING PROGRAMME/COURSE TO OFFER NEW/IMPROVED MANPOWER TO FULFIL THE RISING NEEDS OF A DYNAMIC SOCIETY

DEFINITIONS OF CURRICULUM

- That which is taught in college.
- A set of subjects.
- Content
- A program of studies.
- A set of materials
- A sequence of courses.
- A course of study
- A set of performance objectives

Competency Curriculum

- Consists of competencies.

- Assessment and certification of achievement of the competencies is sequentially integrated into each year of the curriculum culminating with a competency transcript upon graduation

STAGES OF THE PROCESS

- PLANNING
- PREPARING
- DESIGNING
- DEVELOPING
- IMPLEMENTING
- EVALUATING
- REVISING
- IMPROVING

CURRICULUM PREPARATION

- SYSTEMATIC, SYSTEMS
- DATA, CONTENT
- SELECTIONCOLLECTIONASSESSMENT
- ORGANISATION

CURRICULUM DESIGN

- Analysis of social /technical needs
- Translating the needs into course/general/learning/terminal objectives
- Splitting the objectives into specific objectives
- Grouping the specific objectives into subjects
- Deriving the subjects from the above classification
- Specifying enabling objectives
- Unitising each subject matter
- Specification of required time
- Syllabus formulation

EXAMPLE

MAIN OBJECTIVE

AAA Technological University's six years degree ,Bachelor of Engineering is designed to train the students to work as Engineering Technologist /Professional Engineer in wide ranges of industries.

Splitting the objectives into specific objectives

Sub-objective
(Generic form 1)

To perform the reliable functioning of all materials, components, sub-systems and technologies used; their integration to form a complete, sustainable and self-consistent system; and all interactions between the technical system and the context within which it functions

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Sub-objective
(Specific form 1)

To perform the reliable functioning of electrical machine & power systems or mechanical plants or equipment OR integrity of civil structures and technologies used, their integration to form a a complete, sustainable and self-consistent system; and all interactions between the technical system and the context within which it functions

Sub-objective (Generic form 2)

- To do interpreting technological possibilities to society, business and government; and for ensuring as far as possible that policy decisions are properly informed by such possibilities and consequences, and that costs, risks and limitations are properly understood as the desirable outcomes.

Sub-objective
(Specific form 2)

To do interpreting technological possibilities to design and construction process/ installation /energy production for ensuring as far as possible that overall design and implementation policy decisions are properly informed by such possibilities and consequences, and that costs, risks and limitations are properly understood as the desirable outcomes.

Sub-objective-3

To bring knowledge to bear from multiple sources to develop solutions to complex problems and issues, for ensuring that technical and non-technical considerations are properly integrated, and for managing risk as well as sustainability issues.

Sub-objective 4

To train the students to become predominantly intellectual in nature. advancement of technologies ,development of new technologies and their applications through innovation, creativity and change.

- **Sub-objective-5**

- To contribute to continual improvement in the practice of engineering, and in devising and updating the codes and standards that govern it.

Sub-objective 6

To take a particular responsibility for ensuring that all aspects of a project are soundly based in theory and fundamental principle, and for understanding clearly how new developments relate to established practice and experience and to other disciplines with which they may interact.

Grouping the specific objectives into subjects:

Learning Outcomes of individual subjects

1. KNOWLEDGE AND SKILL BASE

1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.

Learning outcomes of

- **Engineering Fundamental**
- **Physics**
- **Science**
- **Theoretical subjects**

1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.

Learning outcomes of

- **Mathematics**
- **Computer**
- **Information Science**
- **That provide basic & underpinning engineering knowledge**

1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.

Learning outcomes of

Higher Level Engineering subjects with their specific disciplines

1.4. Discernment of knowledge development and research directions within the engineering discipline.

Learning outcomes of

The subjects that develop knowledge & research skills

For example

- **Project subjects**
- **Programming subjects**

1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline

2.3. Application of systematic engineering synthesis and design processes.

Learning outcomes of Engineering design subjects

1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.

Learning outcomes of Sustainability & Renewable subjects

2. ENGINEERING APPLICATION ABILITY

2.1. Application of established engineering methods to complex engineering problem solving.

Example

Learning Outcome of

- Power System Analysis---Electrical
- Foundation Engineering—Civil
- Dynamics of machineries—Mechanical
- Program analysis & design-- ICT
- Radiowave Propagation--Telecommunication

2.2. Fluent application of engineering techniques, tools and resources.

Learning outcomes of

Workshop/ Practical /Laboratory

For example

There should be specific learning outcome for electrical circuit laboratory as well as learning outcome for Electrical circuit theory subject

2.4. Application of systematic approaches to the conduct and management of engineering projects

Example

Learning outcome of management / engineering management subjects

3. PROFESSIONAL AND PERSONAL ATTRIBUTES

3.1. Ethical conduct and professional accountability.

3.2. Effective oral and written communication in professional and lay domains.

3.3. Creative, innovative and pro-active demeanour.

3.4. Professional use and management of information.

3.5. Orderly management of self, and professional conduct.

3.6. Effective team membership and team leadership.

3.1. Ethical conduct and professional accountability.

Engineer Code of Ethics of Myanmar Engineering Society & Myanmar Engineering Council

3.2. Effective oral and written communication in professional and lay domains.

Final year thesis/ oral interview/ presentation

3.3. Creative, innovative and pro-active demeanour.

Design assessment

The student should create/ innovate something

3.4. Professional use and management of information

Project/ design work should include the research work on information
Literacy review
Reference/ resources collections
How those information are assessed, analyzed & utilized in design/ project/ thesis

The relevant learning outcomes should be set for design/ project/ thesis subjects

3.5. Orderly management of self, and professional conduct.

- No plagiarism
- No breach of copy right
- Academic honesty & integrity
- Follow the discipline of the institution

3.6. Effective team membership and team leadership.

Team work & Group Projects are to be encouraged

To align with international engineering standards

The leaning outcomes that cover the above aspects should be included in the subjects.

To assess & review the curriculums, the above aspects should be used as standards so that the engineering courses can be aligned with international engineering education standards.

In writing the learning outcomes for your courses in Workshop sessions, we will ensure to include those Aspects in your curriculums

FURTHER REFERENCES

Engineers Australia References

www.highlightcomputer.com/engineersaustraliareferences.htm

Stage 1 Competencies of Professional Engineer, Engineering Technologists & Engineering Associates (Technician)

Engineering job competencies

http://www.highlightcomputer.com/EngineeringJobCompetencies.pdf

Click HERE

Day 2 Session 2

Competency based education & training & how the competency based training is important to reach the desired outcome

OUTCOME BASED EDUCATION

&

COMPETENCY BASED TRAINING

FOR

Engineering Technician----------AGTI
Engineering Technologists----------BTech
Professional Engineer----------BE

Education Programs

AGTI

Breadth, depth and complexity involving analysis, design, planning, execution and evaluation across a range of technical and/or management functions including development of new criteria or applications or knowledge or procedures.

Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures

AGTI

- demonstrate understanding of specialised knowledge with depth in some areas
- analyse, diagnose, design and execute judgements across a broad range of technical or management functions
- generate ideas through the analysis of information and concepts at an abstract level
- demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills
- demonstrate accountability for personal outputs within broad parameters
- demonstrate accountability for personal and group outcomes within broad parameters.

SAMPLE COMPETENCY BASED SUBJECTS AT AGTI/BTech Equivalent Level (Advanced Diploma-Engineering-Australian Training Packages)

MECHANICAL

MEM30009A	Contribute to the design of basic mechanical systems

ELECTRICAL

UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits

CIVIL_

CPCCBC6001B	Apply building codes and standards to the construction process for large building projects

ICT Engineering

ICAPRG604A Create cloud computing services

Sample Performance at AGTI Level

MEM30009A	Contribute to the design of basic mechanical systems

This unit covers contributing to basic mechanical system design, and selecting the components and mechanical features required to perform simple functions.

ELEMENT	PERFORMANCE CRITERIA
1. Research equipment function and operational requirements	1.1. All relevant drawings, specifications, manuals and documentation are obtained in accordance with workplace procedures. 1.2. Appropriate personnel are consulted to determine requirements. 1.3. Information collected is interpreted and draft functional and operational requirements are prepared and verified with supervisor or design team.

2. Prepare a preliminary sketch/drawing/ specification	2.1. Appropriate components, assemblies and fasteners are selected to perform the required function. 2.2. Where required, components and/or materials are selected from supplier/manufacturer catalogues. 2.3. Appropriate and relevant codes are applied to the sketch/drawing/specification in accordance with workplace procedures. 2.4. The preliminary sketch/drawing/specification is referred to a higher authority for approval in accordance with policy and procedures.

3. Issue or file completed sketch/drawing/specification list as required	3.1. Approved sketch/drawing/specification is stored and catalogued in accordance with standard operating procedures. 3.2. Approved sketch/drawing/specification is issued in accordance with standard operating procedures.

Required skills

Look for evidence that confirms skills in:

- reading and interpreting specifications and drawings

Look for evidence that confirms knowledge of:

- relevant codes and standards
- basic mechanical components:
- shafts
- bearings
- seals
- fasteners, thread systems
- splines
- cams
- drive components:
- electric motors
- IC engines

lifting systems:
lifting jacks
hoists
winch equipment
pneumatic systems:
advantages and disadvantages
compressors
pneumatic components
typical circuits and applications
electrical control
hydraulic systems:

power packs

pumps and other components

typical circuits and applications

electrical control

pumps and piping system:

- purpose of pumps and piping systems
- pumps, valves, pipes and other components

typical piping systems

Sample Performance at AGTI Level

UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits

This unit covers determining correct operation of complex polyphase power circuits and providing solutions as they apply to electrical power engineering work functions. It encompasses working safely, problem solving procedures, including using electrical measuring devices, applying appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions

1	Prepare to provide engineering solutions to problems in complex polyphase power circuits.
2	Provide engineering solutions to problems in complex polyphase power circuits. **2.4 Established methods are used for solving circuit problems from measure and calculated values as they apply to complex polyphase power circuits**

3 Complete work and document solutions for problem solving activities.

REQUIRED SKILLS AND KNOWLEDGE

KS01-EG149A Polyphase power circuit analysis

Evidence shall show an understanding of polyphase power circuit analysis to an extent indicated by the following aspects:

T1 Polyphase supply system encompassing:

- advantage of three phase system compared to single phase systems
- double subscript notation
- phase sequence
- 120 degree operator
- given circuit component parameters, solve practically based problems using:

- equivalent circuits of transformers, lines and loads.
- component values using rectangular and polar notation.
- current divider and potential divider rules using complex impedances.
- The “per unit” values of voltage, current, VA and impedance to a common VA base.

T2Types of three phase system connections encompassing:

- supply to balanced star, 3 and 4 wire loads
- supply to delta connected loads
- effects of phase reversal
- representation of currents and voltages as complex phasors for 3 phase and 3 phase and neutral quantities.
- calculation the values of and draw labeled phasor diagrams, not to scale, to represent complex values of current and voltage for balanced and unbalanced loads for star and delta systems.

- calculation of values of P, Q and S for balanced and unbalanced systems.
- draw and label single phase diagrams to represent 1 phase of a complex 3 phase system.
- represent unbalanced voltages or currents as symmetrical components.
- Phase to phase currents
- Phase to neutral/earth currents.

T3 Balanced three phase loads encompassing:

- calculations of balanced loads connected in star
- calculations of balanced loads connected in delta
- calculation of steady state values of fault current for various configurations.
- evaluation of the symmetrical component impedances for the various distribution system components. Transformers (earthed neutral case). Generators (high impedance earth)

- calculation of fault currents using the per unit approach.
- calculation using the “worst case” values based on transformer impedance only (ie., a short circuit fault)
- estimation of peak values using accepted multipliers.
- effects of the d.c. component on the instantaneous magnitudes of fault currents in transformers and generators.

T4 Unbalanced three phase loads encompassing:

Star – 4 wire systems

Delta systems

Star – 3 wire systems

Star 4 wire with neutral impedance

T7 Fault currents encompassing:

- symmetrical components
- positive, negative and zero sequence impedance
- fault current breaking and let-through energy capacities of circuit breakers, fuses
- importance of fault/arc impedance
- calculation of fault currents - phase-to-earth faults
- calculation of fault currents - phase-to-phase faults
- analysis of asymmetrical faults currents.

T8 Harmonics in three phase systems encompassing:

- presence of triple in harmonics in 3 phase systems
- effects of 3 phase harmonics for different star and delta connections.

`methods for reducing harmonics in three phase systems`

CPCCBC6001B	Apply building codes and standards to the construction process for large building projects

This unit of competency specifies the outcomes required to access, interpret and apply relevant building codes and standards applicable to the construction processes of large, high rise and complex buildings (open licensing classification with special reference to Type A buildings).

To successfully comply with relevant standards and codes in large constructions requires a thorough knowledge of the purpose of the National Construction Code (NCC) coupled with the ability to interpret specific standards in relation to the design and specifications of building projects

1	Access and interpret relevant code and standard requirements.	1.1	Relevant clauses from the NCC that apply to individual projects (classified as open) are identified.
		1.2	Prescriptive requirements of relevant NCC clauses for standard construction are determined for the scope of work.
		1.3	Requirements of relevant Australian standards referenced in the NCC are accessed and interpreted appropriately.

2	Classify buildings.	2.1	Nature of a building is determined according to use and arrangement.
		2.2	NCC criteria to determine the defined classification are applied.
		2.3	NCC requirements for multiple classifications are identified and interpreted.

3	Analyse and apply a range of solutions to a construction problem for compliance with the NCC.	3.1	Range of criteria that will ensure construction methods comply with intent of the NCC is determined.
		3.2	Alternative solutions to a construction problem that will comply with NCC performance requirements are discussed and proposed according to company policies and procedures and standard specifications.
		3.3	Performance-based solutions are identified and documented according to NCC requirements.

3.4	Assessment methods used by authorities to determine whether a building solution complies with the NCC are analysed and applied.
3.5	NCC assessment methods are identified as appropriate to meet DTS provisions of NCC.
3.6	Relevant documentation is identified and completed according to performance requirements of the NCC.

4	Apply fire protection requirements.	4.1	Fire resistance required for the construction of all classes and types of buildings is determined.
		4.2	NCC requirements with respect to passive and active fire protection to all classes and types of buildings are identified and applied.
		4.3	Check of existing buildings for compliance with passive and active fire protection requirements is carried out according to NCC requirements.

5	Implement strategy to manage compliance with NCC for large, complex and high rise buildings.	5.1	Processes are established and implemented to coordinate the work of professionals involved in the development and management of the building process.
		5.2	Effective design solutions for buildings of more than three storeys are sought to meet the needs of clients and ensure compliance with NCC.
		5.3	Quality assurance processes are designed and implemented to ensure effective and compliant management of the construction process.

Required skills for this unit are:

- accurate application of building codes and standards
- application of design concepts and principles according to Australian standards
- application of design concepts and principles according to NCC
- analysis and interpretation skills relating to documentation from a wide range of sources, including NCC and Australian standards

- communication skills to:
- enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
- discuss and propose alternative solutions
- read and interpret specifications and drawings
- use and interpret non-verbal communication
- use language and concepts appropriate to cultural differences
- written skills to complete documentation according to NCC requirements
- numeracy skills to apply mathematical information included in building codes and standards.

Required knowledge for this unit is:

- application of NCC, namely:
- low rise:
- Class 1 and 10
- Class 2 to 9 with a gross floor area not exceeding 2000 square metres, not including Type A or Type B construction

- **medium rise:**
- **Class 1 and 10**
- **Class 2 to 9 to a maximum of 3 storeys, not including Type A construction**
- **open:**
- **all classes of building and types of construction**
- **application of relevant Australian standards**
- **definitions and common technical terms or usage specified under general provisions of NCC**

- design principles and the behaviour of structures under stress, strain, compression, bending or combined actions
- nature of materials and effects of performance
- NCC performance hierarchy
- relevant legislative and OHS requirements, codes and practices

work drawings and specifications

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Resource implications for assessment include:

- **NCC, Class 2 to 9 buildings and Guide to NCC**
- **documentation, including design brief drawings, specifications, codes, design concepts, construction schedules and other necessary supporting documents**
- **research resources, including product information and data**
- **access to relevant legislation, regulations and codes of practice; like NCC, National Timber Framing Code, AS1684, AS4055 and other Australian standards required to meet the purpose of intended use**
- **relevant computer software package and suitable hardware.**

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

Validity and sufficiency of evidence

ICAPRG604A Create cloud computing services

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to design, build, test and deploy web services and cloud computing applications to specification.

Application of the Unit

This unit applies to those required to create and install web services and cloud computing applications in their job as a computer programmer.

1. Design web service or cloud computing application	1.1. Gather requirements for the web service or cloud computing application 1.2. Determine the development environment and tools to create web service or cloud computing application 1.3. Identify any possible big data applications 1.4. Define architecture, framework and protocols
2. Build web service	2.1. Itemise required functionality 2.2. Build web service in the determined environment to meet required functionality

3. Build cloud computing application	3.1. Determine required functionality 3.2. Build cloud computing application in the determined environment to meet the required functionality
4. Test web service or cloud computing application	4.1. Test web service or cloud computing application for overall functionality according to requirements 4.2. Iterate design or build until test results meet requirements

5. Deploy web service or cloud computing application	5.1. Deploy web service or cloud computing application to the specified environment 5.2. Publish web service or cloud computing application to the specified environment

analytical skills to:

- examine and define system requirements
- review requirements and determine appropriate solution
- communication skills to:
- interact with developer to determine system requirements
- interact with end user or client to determine system requirements
- literacy skills to read technical specifications
- planning and organisational skills to perform tasks according to the project plan

- **problem-solving skills to:**
- address common problems in operating a web service or cloud computing application
- perform basic debugging, such as defining simple problem, locating source of the problem, and providing solution to problem
- research skills to find and evaluate technologies to meet system requirements

- **technical skills to:**
- **access databases and manipulate data**
- **create applications using basic programming techniques**
- **create web pages using hypertext markup language (HTML) and cascading style sheet (CSS)**
- **perform basic operations within a web environment**

use an integrated development environment (IDE)

Required knowledge

- development tools to produce services deployable from the internet (cloud computing)
- internet infrastructure
- object-oriented programming
- overview knowledge of:
- database access and manipulation
- HTML
- eXtensible markup language (XML)

B Tech

- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Substantial breadth and complexity involving the initiation, analysis, design, planning, execution and evaluation of technical and management functions in highly varied and highly specialised contexts.

- Applications involve making significant, high-level, independent judgements in major broad or planning, design, operational, technical and management functions in highly varied and specialised contexts. They may include responsibility and broad-ranging accountability for the structure, management and output of the work or functions of others.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.

- Demonstrate the self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Initiate, analyse, design, plan, execute and evaluate major broad or technical and management functions in highly varied and highly specialised contexts.
- Generate and evaluate ideas through the analysis of information and concepts at an abstract level.
- Demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills in complex contexts.
- Demonstrate responsibility and broad-ranging accountability for the structure, management and output of the work or functions of others.

- BE
- The self-directed development and achievement of broad and specialised areas of knowledge and skills, building on prior knowledge and skills.
- Substantial breadth, depth and complexity involving the initiation, analysis, design, planning, execution and evaluation of major functions, both broad and highly specialised, in highly varied and highly specialised contexts.
- Further specialisation within a systematic and coherent body of knowledge.

- Applications involve making high-level, fully independent, complex judgements in broad planning, design, operational, technical and management functions in highly varied and highly specialised contexts. They may include full responsibility and accountability for all aspects of work and functions of others, including planning, budgeting and strategy development.
- The degree of emphasis on breadth, as opposed to depth, of knowledge and skills may vary between qualifications granted at this level.

Distinguishing features of learning outcomes

- **Demonstrate the self-directed development and achievement of broad and highly specialised areas of knowledge and skills, building on prior knowledge and skills.**
- **Initiate, analyse, design, plan, execute and evaluate major functions, both broad and within highly varied and highly specialised contexts.**
- **Generate and evaluate complex ideas through the analysis of information and concepts at an abstract level.**
-

- **Demonstrate an expert command of wide-ranging, highly specialised, technical, creative or conceptual skills in complex and highly specialised or varied contexts.**
- **Demonstrate full responsibility and accountability for personal outputs.**
- **Demonstrate full responsibility and accountability for all aspects of the work or functions of others, including planning, budgeting and strategy**

Common Year 3

1. BAE 401 Advanced Engineering Mathematics (9 pt)
2. BAE 402 Calculus (3 pt)
3. BAE 403 Engineering Mechanics (1 pt)
4. BAE 404 Engineering Materials & Thermodynamics (3 pt)
5. RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)
6. .RE003- Solar and Thermal Energy Systems (2 pt)
7. RE004- Energy Storage Systems (2 pt)
8. RE005- Renewable Energy Resource Analysis (2 pt)
9. RE006- Wind Energy Conversion Systems (2 pt)
10. RE010-Engineering Materials (2 pt)
11. RE012a-Electrical Engineering Part 1 (2pt)
12. RE016-Design& Management (BAE508) (2 pt)

(Electrical) YEAR 4 (Specialized)

1. BAE 601 Computer Programming
2. BAE 602 Computer Network
3. BAE 603 Software Engineering
4. RE012b-Electrical Engineering Part 2
5. RE002- Grid Connected Photovoltaic Power Systems
6. RE013-Electrical Machines
7. RE014-Electronics Control
8. RE015-Electrical Project/ Practice
9. BAE 501 Advanced Power Systems & Power Transmission Networks
10. BAE 506 Power System Stability & Protection
11. BAE 604 Telecommunication Engineering
12. RE007- Energy System Efficiency

CIVIL Year 4

1 RE011a-Civil& Mechanical Engineering Part 1 (2 pt) (Assessment- Study Report)

2 RE011b-Civil& Mechanical Engineering Part 2a (2 pt) (Assessment- Study Report)

3 BAE 606 Building Service Electrical & Mechanical Engineering (2 pt)

4BAE421 Building Construction Engineering (2 pt)

5 BAE422 Estimating (2 pt)

6 BAE423 Fluid Mechanics (2 pt)

7 BAE424 Reinforced Concrete (2 pt)

8 BAE522 Rock Mechanics (2 pt)

9 BAE 523A Environmental Engineering (2 pt)

10BAE621 Structural Engineering (2 pt)

11BAE623 Surveying & Traffic Engineering (2 pt)

12BAE624 Water Supply , Sanitation & Finishing (2 pt)

MECHANICAL YEAR 4

1. RE011a-Civil & Mechanical Engineering Part 1 (2 pt) (Assessment- Study Report)
2. RE011b-Civil & Mechanical Engineering Part 2a (2 pt) (Assessment- Study Report)
3. BAE 606 Building Service Electrical & Mechanical Engineering (2 pt)
4. BAE311 Plant Engineering (2 pt)
5. BAE314 Mechanical Power Generation (2 pt)
6. BAE315 Materials Engineering (2 pt) Part 1 Part 2 (2 pt)
7. BAE511 Air-conditioning & Refrigeration Part 1 (2 pt)
8. BAE512 Building Service Water Supply System (2 pt)
9. BAE613 Mechanical Instrumentation Process(2 pt)
10. BAE614 Machine Design (2 pt)
11. RE007- Energy System Efficiency(2 pt)
12. BAE 601 Computer Programming(2 pt)

Commmon Graduating Units (Year 5)

13. BAE 605 Engineering Management (4 pt)
14. BAE 608 Engineering Competency Demonstration Report

PLUS

Other specialist elective subjects

BE(Electrical Engineering)

Renewable Energy/ Electrical/Mechanical / Civil Engineering Principle/Computer/ Mathematics/ Design/ Management/ Instrumentation /Engineering Practice/ Ethics with Electrical Power & Electronics major

BE (Civil Engineering)

Renewable Energy/ Electrical/Mechanical / Civil Engineering Principle/Computer/ Mathematics/ Design/ Management/ Instrumentation /Engineering Practice/ Ethics with Mechanical Engineering major

BE (Mechanical Engineering)

Renewable Energy/ Electrical/Mechanical / Civil Engineering Principle/Computer/ Mathematics/ Design/ Management/ Engineering Practice/ Ethics with Civil & Structural Engineering major

Sample Programme Objectives.

http://www.highlightcomputer.com/objectives.htm

Click HERE

EXAMPLE DETAILED CONTENTS

Certificate to Advanced Diploma

http://www.highlightcomputer.com/detailedcontent.htm

Bachelor degrees equivalent level

http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Click HERE

- the need for such things as security, comfort and dignity.
- there are learning needs

1 Achieve a qualification.

2 Get the best grade at the end of the course.

3 Progress to a further course.

4 Muddle through.

5 Find out more about [a specified area of the subject].

6 have no specific aims.

OBJECTIVES

- Objectives are based on the notion that education is observable and measurable

LEARNING

- Which parts of your lessons lend themselves to thinking in terms of stimulus and response?
- Where do assessment criteria require only certain *outcomes* rather than levels of *understanding*

1 Knowledge and understanding.

2 Skills, techniques, and methods.

3 Attitudes and perspectives

4 Judgements and decisions

an objective

Specific in terms of

(a) what is to be learnt and

(b) the time within which it is to be learnt;

Capable of assessment;

Achievable;

Manageable in the context you are working in.

1 Introduction.

2 Exposition. ,

3 Clarification.

4 Enactment.

5 Feedback.

6 Transfer

7 Deliberate practice.

There are four main types of practice:

1 Drills.

2 Variable practice.

3 Massed practice.

4 Distributed practice.

1 Introduction.

2 Presentation.

3 Conclusion

Theoretical Learning

- theory and generalization;
- the concrete and the particular
- reflection
- activity

Learning from concrete

In place of generalizations, axioms, probabilistic statements and deductive logic

Use one both of the two great staples of concrete learning

- The worked example and
- The case study

Reflective Learning

The first is by encouraging pupils to reflect on aspects of their life in general - things that they have learnt beforehand, whether in or out of school.

The second is by encouraging pupils to reflect on what they have already learnt or experienced within the scheme of work that you are now engaged in appropriate for work experienced learners.

Active Learning

Active learning can feature in your planning in two places. Sometimes you can arrange for active learning within your lessons - drama, role-play, observation, conducting surveys, filming, and so on. Sometimes you can build it into the homeworks that you set, such as interviewing, researching and mini fieldwork projects

General learning strategies - techniques, habits of mind, and so on, not related to specific subjects or topics.

Contiguous knowledge - knowledge closely associated with that you are planning to teach.

Comparable knowledge - knowledge of a different topic that is sufficiently similar for analogies to be drawn.

Top-down' knowledge - pupils who have learnt about a general concept (e.g. deforestation) proceed to learn about particular instances (e.g. Amazonia).

'Bottom-up' knowledge - pupils who have learnt about particular cases proceed to learn about the general concepts, issues or themes that they exemplify.

Lesson Plan Format

Phase One:

Develop the following:

- Training content
- Graphics
- Media needs
- Lesson plans
- Instructor guides
- Evaluation needs
- Software needs

Phase Two:

- Revise all items in Phase One.

Phase Three:

Complete the following.

- Conduct the test.
- Revise the program on the basis of the test.
- Schedule a second test, if needed.

TITLE: How to use the bundling machine

WRITTEN BY: Author's

Note DATE: Date Written

OBJECTIVES: At the end of this session, the participants will be able to

1. State one reason for using the bundling machine
2. Demonstrate the correct use of the bundling machine located in the workshop
3. State when the bundling machine is used

SESSION TIME: 15 minutes

NUMBER OF PARTICIPANTS: 6 (up to 10)

ENTRY LEVEL: New employees

AIDS/EQUIPMENT: Sample bundling machine

6 bundling cards for each participant
Whiteboard and markers

POTENTIAL FAULTS: Session not to be conducted at start or finish time of workshop

Phase Four:

Conduct the following.

- Pilot-test a prototype program.
- Evaluate the pilot test.
- Identify the required revisions.

Revise the program as required (on the basis of the pilot test).

- Schedule another test, if needed.

Phase Five: Follow-through on the following.

- Finalize the training program content.
- Produce the training program in final form.

- During the development phase, you will select, write, or otherwise obtain all training documentation and evaluation materials. These may include the following:

- Training materials
- Instructor guide (including lesson plans and a list of required supporting materials)
- Learners' guide or workbook
- Nonprint media (computer software, audiotapes and videotapes, equipment checklists)
- Program evaluation materials
- Procedures for evaluation

Supervisors' form for evaluation of course participants' post-training job performance

- Training documentation
- Class attendance forms and other records for participants
- Course documentation (written objectives, authorship and responsibility for course material, lists of instructors and facilitators, and their qualifications)

The key message gleaned is that engineering education must be adapted to the challenges of globalization.

Course and curriculum redesign must better address and constructively align "what" is to be learned and "why" those target outcomes are needed.

Then, building on the "what" and "why", it should present clearly the "how" or strategies used to achieve them.

We know that current engineering students will be tomorrow's engineering workforce and that they will have to face and address challenges and dilemmas that are very different from the problems and tasks they were exposed to as students.

The nature of those challenges will require them to take on open-ended ill-defined problems and unforeseen issues, understand system-level challenges, and respond to them with innovations.

If they have not experienced creative challenges that require innovative responses in their engineering classes, they will not be prepared to do so in their professional careers.

The “how” of developing this type of skills and expertise in analysis, evaluation, and creative production for unforeseen needs requires authentic experience in tasks that require students to exercise these skills

Purpose

Development and consolidation of discipline knowledge and skills, with increasing opportunities for application

Knowledge

comprehensive understanding of the major theoretical approaches, concepts, practices, methodologies, etc.

One way to provide this experience is experiential learning.

If designed well, experiential learning not only offers authentic opportunity but also supports self-determined motivation and regulation.

Further, it can be structured to enable adaptive interaction among those with various types of expertise, sharing in a professional community, and experience building both competence and community.

This involves balancing structure and autonomy, supporting both team and individual effort, and valuing error that leads to deeper learning and skill refinement.

Related to these outcomes is the power of metacognition, reflection on task process and products, both during and after experiences.

Metacognition is directly linked to the process skills of analysis and evaluation and, within a discipline, divides legitimately creative experts from those whose skills are limited to doing the same thing, albeit doing it well, over and over again (Ericsson, 2006).

Curriculum Development

- Needs of engineering workforce
- Appropriate to changing needs of industry & technology
- National guidelines
- Relevant & related to & based on and past & current curriculums
- Based on accumulation of lesson planning for each lesson, each unit in the curriculum
- Concern the interrelation of the contents
- Develop on skills level & performance standards—Outcome based/ Competency based/ Adult Education/ Vocational Education & Training

Step 4 Provide the practical example of a curriculum which is developed based on MEng C requirements

Myanmar Engineering Council

9.2.3 Learning Outcomes

I List down the Learning Outcomes and state where are they published

Objectives

Day 1 Session 3 Slide 17 to 31

1. KNOWLEDGE AND SKILL BASE

2. ENGINEERING APPLICATION ABILITY

3. PROFESSIONAL AND PERSONAL ATTRIBUTES

Myanmar Engineering Council

Ii how the Learning Outcomes relate to the Programme Objectives

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE 1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.	BAE 403 Engineering Mechanics(1 pt) BAE 404 Engineering Materials & Thermodynamics (3 pt) RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)	Mechanical Renewable Energy

Learning Outcome	Subjects	Study Area
1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.	BAE 401 Advanced Engineering Mathematics (9 pt) BAE 402 Calculus(3 pt) BAE 601 Computer Programming BAE 603 Software Engineering	Mathematics Computer

Learning Outcome	Subjects	Study Area
1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline	RE003- Solar and Thermal Energy Systems (2 pt) RE006- Wind Energy Conversion Systems (2 pt)	Renewable Energy

Learning Outcome	Subjects	Study Area
1.4. Discernment of knowledge development and research directions within the engineering discipline.	RE014-Electronics Control RE007- Energy System Efficiency	Electronics Renewable Energy

Learning Outcome	Subjects	Study Area
1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.	RE010-Engineering Materials (2 pt) RE012a-Electrical Engineering Part 1 (2pt) RE002- Grid Connected Photovoltaic Power Systems	Material Science Electrical Electronics

Learning Outcome	Subjects	Study Area
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	RE005- Renewable Energy Resource Analysis (2 pt) BAE 602 Computer Network RE004- Energy Storage Systems	Renewable Energy Computer Mechanical

MORE INFORMATION?

Please see

www.highlightcomputer.com/OverallProgramGeneral.pdf

Myanmar Engineering Council

Ii how the Learning Outcomes relate to the Programme Objectives. Click HERE

Page 20+21

Page 28-30--- BE (Electrical)

Page 35-37--- BE (Civil)

Page 41-43--- BE (Mechanical)

iii. Describe the processes used to establish and review the Learning Outcomes, and the extent to which the programme's various stakeholders are involved in these processes.

(Myanmar Engineering Council)

- Explain the contents in Detailed Course Teaching Plans/TAEASS502B Folder

Assessment tools developed

Consultation on the context requirements of candidates

Evidence of a review process used for your assessment tools

Example of any recognition pathways developed

Assessment tools developed

Test Questions

Student_Assessment_Guide

Assessment - Cover sheet

Asessment_Feedback_Sheet

PLEASE SEE THE EXAMPLES

Consultation on the context requirements of candidates

Evidence of a review process used for your assessment tools

- Students' feedback
- Peers' review

Example of any recognition pathways developed

- Portfolio
- Other relevant courses
- Work experience evidences
- Third party ‘s report
- Competency test

Work samples etc

iV Describe the data gathered and explain the results of the assessment. **(Work shop session)**

(Myanmar Engineering Council)

Analysis of Assessment

- Explain the contents in Detailed Course Teaching Plans/ analysis of assessment records Click HERE

Look at the assessment records (Students' attendances & result/Provide your comments)

v Explain how the assessment results are applied to further develop and improve the programme. **(Myanmar Engineering Council)**

- Explain the contents in
  Detailed Course Teaching Plans/ how improvements were made to assessment and or recognition processes

ASSESSMENT VALIDATION SIGNED template
Click HERE

DURING THE INTRODUCTION OF EACH LESSON

STEP		1	2	3	4	5
1	How well were you informed of the topic of the lesson?					
2	How well were you informed of the purpose of the lesson?					
3	How well were you informed of the learning outcomes?					
4	How good was the revision of the previous lesson?					

DURING THE DELIVERY OF EACH LESSON

STEP		1	2	3	4	5
1	How often were the topics explained in logical sequence?					
2	How often were problem-solving techniques used?					
3	How often were the topics delivered with examples?					
4	How often was a hierarchical organisation of topics done?					
5	How often did the teacher summarise important ideas?					
6	How often did the teacher state a relationship between points?					

DURING THE DELIVERY OF EACH LESSON

7	**How often did the teacher use graphics during the presentation?**					
8	How well did the topics presented match the learning outcomes?					
9	How often did the teacher ask you questions?					
10	How often did the teacher encourage for class feedback?					
11	How much did the training materials enhanced your learning?					

DURING THE REVIEW OP EACH LESSON

STEP		1	2	3	4	5
1	How well did the review of the lesson cover the main ideas?					
2	How appropriate was the time given to review each lesson?					
3	How did the questions in the quiz match the learning outcomes?					
4	How appropriate was the time given to answer quiz questions?					
5	How good was the feedback given on the quiz answers?					
6	How well was the topic of one lesson linked with next lesson?					

PRESENTATION STRATEGIES OF THE TEACHER

STEP		1	2	3	4	5
1	How well paced was the delivery of the lessons?					
2	How often did the teacher use non-verbal delivery?					
3	How good was the clarity of the teacher's voice?					
4	How often did the teacher maintained eye contact with the group?					
5	How much of the teacher's language was appropriate to you?					
6	To what degree was your interest and motivation maintained?					
7	How approachable was the teacher's style to you					

What are your comments?

Are you happy with your study?

Yes/No

Individual Teachers Reflection---

- Self Assessment Journal Reflection.doc
- Collection of Teachers' Reflection by Head of Department
- SAR (Self Assessment Report-MEng C

vi. Describe the materials, including student work and other tangible materials that demonstrate (Myanmar Engineering Council)

- Page 23+24 of **OverallProgramGeneral.pdf**

www.highlightcomputer.com/OverallProgramGeneral.pdf

- Online mode of learning materials
- In DVD, CD etc
- Click HERE

Processes and Results: (MEng C) The programme shall have a clear linkage between Programme Objectives and Learning Outcomes (Section 4.0); a process of ongoing assessment an evaluation that demonstrates the achievement of Programme Objectives with documented results; and evaluation results that are used in the continual improvement of the programme. (Myanmar Engineering Council)

Professional Diploma

Year 2+3 Learning Outcomes & Teaching /Assessment Strategies Page 49 to 52of OverallProgramGeneral.pdf

www.highlightcomputer.com/OverallProgramGeneral.pdf

Click HERE

- Then provide the example Page 61 to 63-BE (Electrical)
- Then provide the example Page 67 to 69-BE (Civil)
- Then provide the example Page 74 to 76-BE (Mechanical)

Knowledge

- broad and coherent knowledge with depth in one or more disciplines

Skills

- cognitive skills to critically, analyse, consolidate and synthesise knowledge
- cognitive and technical skills to demonstrate a broad understanding of knowledge with depth in some areas
- cognitive and creative skills to exercise critical thinking and judgement in identifying and solving problems with intellectual independence
- communication skills to present a clear, coherent and independent exposition of knowledge and ideas

Application of Knowledge & Skills

- apply knowledge and skills with initiative and judgement in planning, problem solving and decision making in professional practice and/or scholarship
- adapt knowledge and skills in diverse contexts
- with responsibility and accountability for own learning and professional practice and in collaboration with others within broad parameters

Skills

- Consolidate and extend key academic skills including:
- high order cognitive skills in processing knowledge
- rigorous techniques of enquiry involving primary and secondary sources and a range of technologies
- problem solving and creativity using various techniques in diverse contexts
- collaborative and independent learning
- communication skills (oral, written, academic, professional) including the use of relevant technologies
- Consolidate and extend key discipline technical skills

Application of Knowledge & Skills

- apply and adapt major theoretical principles and approaches to real world contexts

- develop skills in planning, problem solving, decision-making, teamwork, communication, intellectual independence and accountability in professional practice and/or scholarship

Key Verbs

- organise
- integrate
- differentiate, examine
- distinguish
- discuss, elaborate
- calculate
- collaborate
- discover
- critically review
- explain, interpret

- compare, contrast
- summarise, paraphrase
- demonstrate
- cooperate
- use, modify
- organise

Types of assessments

- critical review
- construct a chart
- analyse data, graph
- create a database
- write a reflective journal
- analyse an argument
- compare theories
- make generalisations

- apply models
- develop and conduct a survey
- investigate an issue
- critical essay
- role play
- make a presentation
- debate
- defend a position
- quiz, test, exam
- tutorial paper

Year 2+3 Learning Outcomes & Teaching /Assessment Strategies Page 49 to 52of OverallProgramGeneral.pdf

www.highlightcomputer.com/OverallProgramGeneral.pdf

- **Then see the example Page 61 to 63-BE (Electrical)**
- **Then see the example Page 67 to 69-BE (Civil)**
- **Then see the example Page 74 to 76-BE (Mechanical)**
- Click HERE

- the choice of the teaching-learning (delivery) methods.
- The curricular approach, the educational content and the teaching-learning
- assessment & evaluation methods for the attainment achievement of the Learning Outcomes.

- Course Delivery Documentations
- Assessment
- Assessment Validation
- Continuous Improvement Register
- Delivery and Assessment Schedule
- Scope Application
- Industry Consultation
- Memorandum of Understanding
- Physical Resources
- Teaching , Assessment Skills
- Other

(Myanmar Engineering Council)

A balanced curriculum shall include all technical and non-technical attributes listed in the Learning Outcomes, (the essential elements forming the core of the programme and additional specialist or optional studies (electives). (MEng C)

- The curriculum shall integrate theory with practice through adequate exposure to laboratory work and professional engineering(MEng C)
- Time allocation
- Credit points (The academic programme component must consist of a minimum total of 120 credit (a) A minimum of 80 credit hours shall be engineering courses consisting of engineering sciences and engineering design/projects appropriate to the student's field of study. (MEng C)

(b) The remaining credit hours shall include sufficient content of general education component (such as mathematics, computing, languages, general studies, co- curriculum, management, law, accountancy, etc(MEng C)

Provide samples—Page 77 to 86 of OverallProgramGeneral.pdf

www.highlightcomputer.com/OverallProgramGeneral.pdf

Click HERE

Australian Vocational Education System Example for Myanmar Technical Education

Dr Kyaw Naing

(Providing the information rather than presenting the own educational theories & concepts)

TRAINING & SKILLS

- The development of a country depends on the education system that can provide the appropriate education, skills and competency required for performing the tasks at different levels of occupations.

APPROPRIATE SKILLS & TRAINING RQUIREMENT FOR A PARTICULAR OCCUPATION

EXAMPLES OF AUSTRALIAN STANDARDS OF OCCUPATIONAL CLASSIFICATIONS

Skills & Qualifications for Australian Occupations

- SKILL LEVEL 1
- Occupations at Skill Level 1 have a level of skill commensurate with a bachelor degree or
- higher qualification. At least five years of relevant experience may substitute for the formal qualification. In some instances relevant experience and/or on-the-job training
- may be required in addition to the formal qualification.

TASKS OF SKILL LEVEL 1

- setting the overall direction and objectives of organisations and departments within organisations

- formulating, administering and reviewing policy and legislation to ensure organisational and departmental objectives are met

- directing and coordinating the allocation of assets and resources

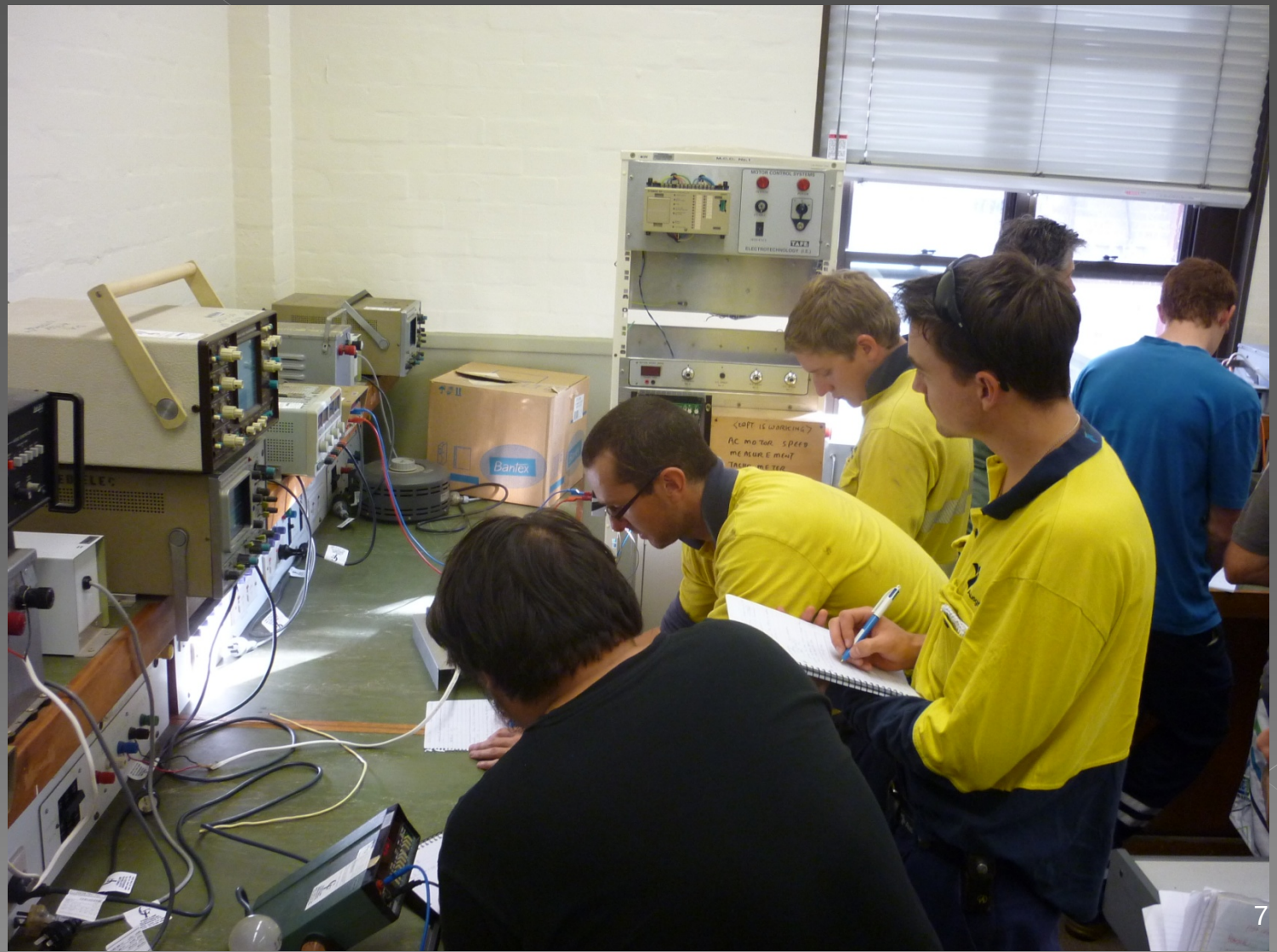
- directing, controlling and coordinating the activities of organisations and departments, either personally orthrough senior subordinate staff monitoring and evaluating overall organisational and departmental performance, and adjusting policies,rules and regulations to ensure objectives are met

- representing the organisation at official occasions, in negotiations, at conventions, seminars, public hearings and forums, and liaising between areas of responsibility

SAMPLES OF SKILLS LEVEL 1 OCCUPATIONS

- Specialist Managers
- Farmers and Farm Managers
- Chief Executives, General Managers and Legislators
- Legal, Social and Welfare Professionals
- ICT Professionals
- Health Professionals
- Education Professionals
- Design, Engineering, Science and Transport Professionals
- Business, Human Resource and Marketing Professionals
- Arts and Media Professionals

Skills & Training for qualified para-professionals



Skills & Qualifications for Australian Occupations

- SKILL LEVEL 2
- Occupations at Skill Level 2 have a level of skill commensurate with one of the following:
- NZ Register Diploma or
- AQF Associate Degree, Advanced Diploma or Diploma.
- At least three years of relevant experience may substitute for the formal qualifications
- listed above. In some instances relevant experience and/or on-the-job training may be
- required in addition to the formal qualification.

TASKS OF SKILLS LEVEL 2

- communicating ideas through language, printed and electronic media, and artistic media including the visual and performing arts
- analysing, planning, developing and implementing programs and solutions to resolve business and economic problems
- providing services in financial accounting, human resource development, publicity and marketing, and the efficient operation of organisation flying aircraft, and controlling and directing the operation of ships, boats and marine equipment
- conducting and analysing research to extend the body of knowledge in the field of the sciences and developing techniques to apply this knowledge
- designing products, buildings and other physical structures, and engineering systems
- researching and developing curricula, and teaching students in a range of educational settings
- designing, implementing, testing and maintaining technologies and services that enable information to be accessed, stored, manipulated, processed, and disseminated
- identifying, treating, and advising on, health, social, and personal issues
- advising clients on legal matters

SAMPLES OF SKILLS LEVEL 2 OCCUPATIONS

- Engineering, ICT and Science Technicians
- Health and Welfare Support Workers
- Office Managers and Program Administrators

Skills & Qualifications for Australian Occupations

- SKILL LEVEL 3
- Occupations at Skill Level 3 have a level of skill commensurate with one of the following:
- NZ Register Level 4 qualification
- AQF Certificate IV or
- AQF Certificate III including at least two years of on-the-job training.

TASKS OF SKILLS LEVEL 3

Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.

Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop Australian criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills.

Applications involve responsibility for, and limited organisation of, others.

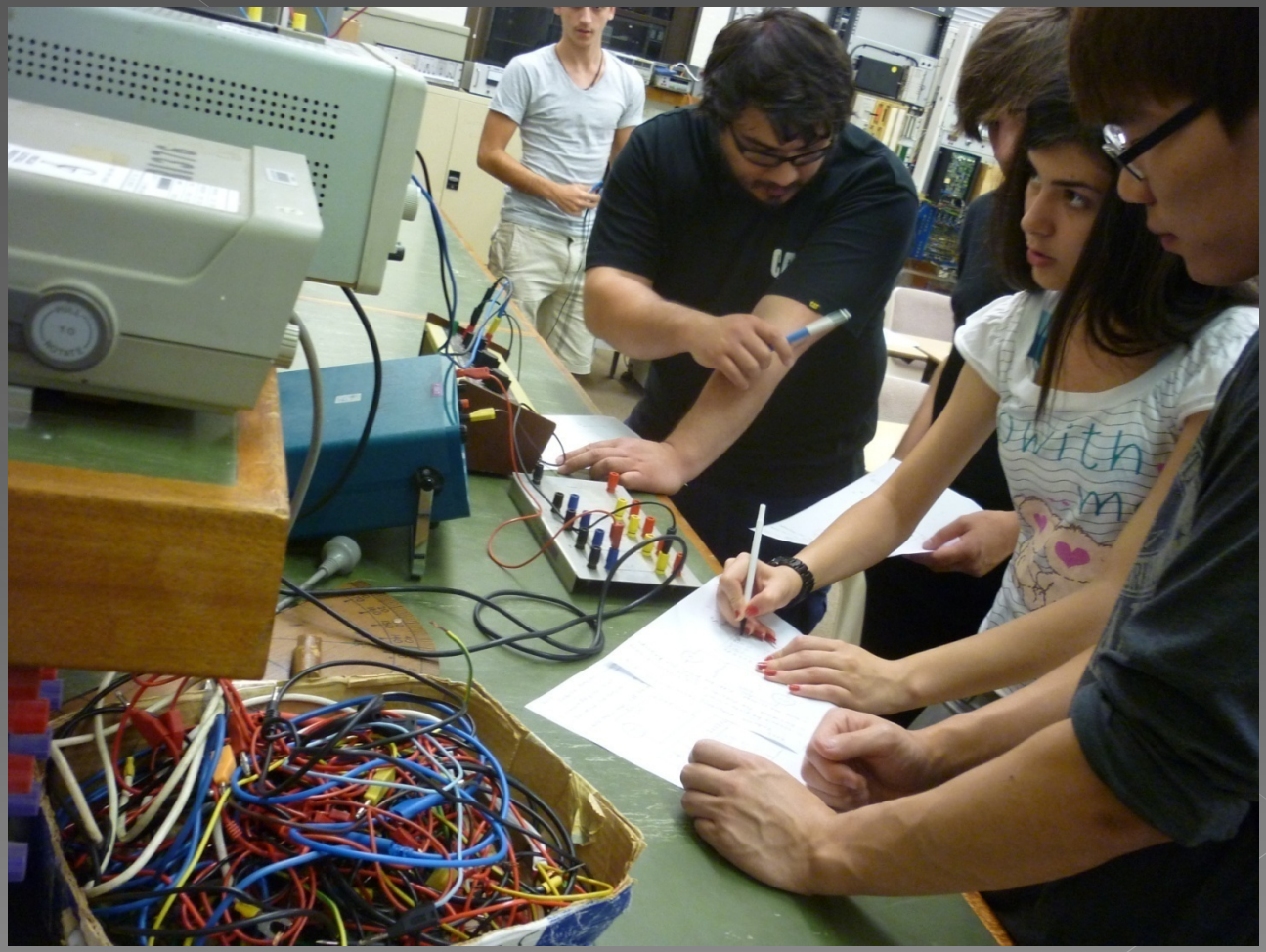
SOME EXAMPLE TASKS OF SKILLS LEVEL 3

- carrying out tests and experiments, and providing technical support to Health Professionals, Natural and Physical Science Professionals and Engineering Professionals
- providing technical support to users of computer hardware and software
- fabricating, repairing and maintaining metal, wood, glass and textile products
- repairing and maintaining motor vehicles, aircraft, marine craft and electrical and electronic machines and equipment
- constructing, repairing, fitting-out and finishing buildings and other structures operating printing and binding equipment
- preparing and cooking food
- shearing, caring for, training and grooming animals, and assisting Veterinarians
- propagating and cultivating plants, and establishing and maintaining turf surfaces for sporting events
- cutting and styling hair
- operating chemical, gas, petroleum and power generation equipment
- providing technical assistance for the production, recording and broadcasting of artistic performances

SAMPLES OF SKILLS LEVEL 3 OCCUPATIONS

- Technicians and Trades Workers
- Skilled Animal and Horticultural Workers
- Food Trades Workers
- Electrotechnology and Telecommunications Trades Workers
- Construction Trades Workers
- Automotive and Engineering Trades Workers

EDUCATION & TRAINING FOR SKILLED WORKERS



Skills & Qualifications for Australian Occupations

SKILL LEVEL 4

Occupations at Skill Level 4 have a level of skill commensurate with one of the following:

- NZ Register Level 2 or 3 qualification or
- AQF Certificate II or III.

At least one year of relevant experience may substitute for the formal qualifications listed above. In some instances relevant experience may be required in addition to the formal qualification.

TASKS OF SKILLS LEVEL 4

Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to Australian environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.

Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the section of equipment, services or contingency measures and within known time constraints.

Applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved.

SAMPLES OF SKILLS LEVEL 4 OCCUPATIONS

- Sports and Personal Service Workers
- Protective Service Workers
- Hospitality Workers
- Carers and Aides
- Sales Representatives and Agents
- Other Clerical and Administrative Workers
- Clerical and Office Support Workers
- Numerical Clerks
- Inquiry Clerks and Receptionists

SAMPLES OF SKILLS LEVEL 4 OCCUPATIONS

- Storepersons
- Road and Rail Drivers
- Mobile Plant Operators
- Machine and Stationary Plant Operators

Skills & Qualifications for Australian Occupations

- SKILL LEVEL 5
- Occupations at Skill Level 5 have a level of skill commensurate with one of the following:
- NZ Register Level 1 qualification
- AQF Certificate I or
- compulsory secondary education.

SAMPLES OF SKILLS LEVEL 5 OCCUPATIONS

- Food Preparation Assistants
- Farm, Forestry and Garden Workers
- Factory Process Workers
- Construction and Mining Labourers
- Cleaners and Laundry Workers
- Other Labourers


SKILLS TRAINING FOR
NEW GENERATION

VOCATIONAL EDUCATION & TRAINING FOR SKILLS LEVEL 2,3,4 & 5

- NATIONAL APPROACH & GUIDELINES
- INDUSTRY SKILLS COUNCILS
- STATES & TERRITORITIES TRAINING AUTHORITIES
- AUSTRALIAN QUALIFICATIONS FRAMEWORK
- EDUCATIONAL & TRAINING INSTITUTIONS

www.trainming.gov.au

- **training.gov.au** encompasses the national register which contains the authoritative information about Registered Training Organisations (RTOs), recognised training products and the approved scope of each RTO to deliver nationally recognised training as required in national and jurisdictional legislation within Australia.

  Information on this site is maintained by the Registration and Course Accreditation Bodies (RCABs) and the Industry Skills Councils (ISCs).

LIST OF TRAINING PACKAGES

- Agri-Food Training Package
- Live Performance Training Package
- Library, Information and Cultural Services Training Package
- Visual Arts, Crafts and Design Training Package
- Forest and Forest Products Training Package

List of training packages

- Printing and Graphic Arts
- Integrated Telecommunications Training Package
- Sustainability Training Package
- Manufactured Mineral Products
- Seafood Industry Training Package
- Hairdressing Training Package

List of training packages

- Sugar Milling Training Package
- Maritime Training Package
- Electrotechnology Training Package
- Gas Industry Training Package
- Pulp Paper Manufacturing Industry Training Package
- Australian Meat Industry Training Package

List of training packages

- Plastics, Rubber and Cablemaking Training Package
- Electricity Supply Industry - Generation Sector Training Package
- Screen and Media Training Package
- Music Training Package
- Laboratory Operations Training Package
- Retail Services Training Package

List of training packages

- Sport, Fitness and Recreation Training Package
- Animal Care and Management
- Food Processing
- Water Training Package
- TAE10 Training and Education
- TRANSPORT AND LOGISTICS TRAINING PACKAGE

List of training packages

- Agriculture, Horticulture and Conservation and Land Management
- Local Government Training Package
- Tourism, Hospitality and Events Training Package
- Community Services Training Package
- Financial Services Training Package
- Chemical, Hydrocarbons and Refining Training Package

List of training packages

- ASSET MAINTENANCE TRAINING PACKAGE
- Resources and Infrastructure Industry Training Package
- Transmission, Distribution and Rail Sector Training Package
- Entertainment Training Package
- Automotive Industry Retail, Service and Repair Training Package

List of training packages

- Health Training Package
- Textiles, Clothing and Footwear Training Package
- Public Sector Training Package
- Business Services Training Package
- Metal and Engineering Training Package
- Construction, Plumbing and Services Training Package

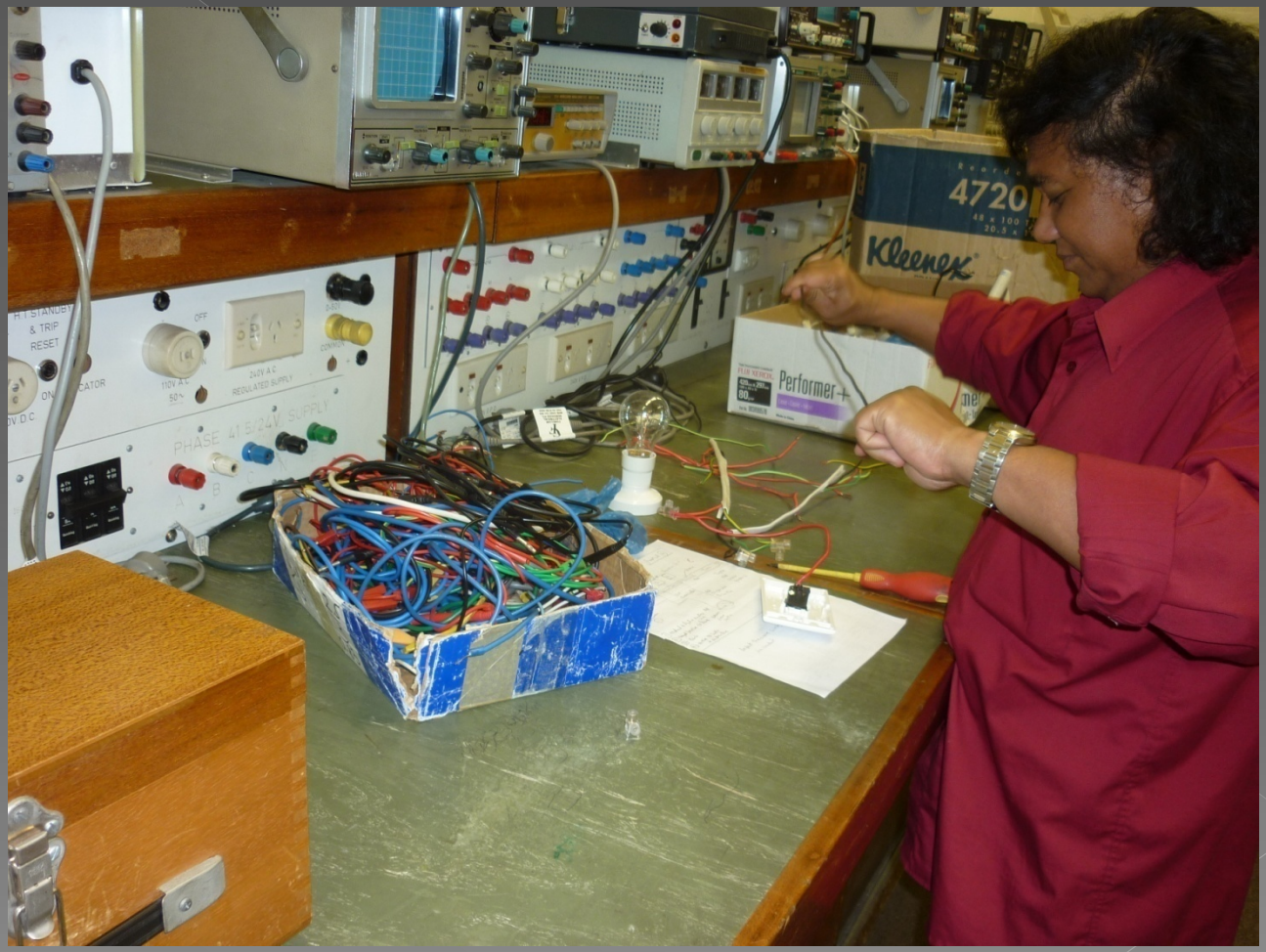
List of training packages

- Manufacturing Training Package
- Furnishing Training Package
- Public Safety Training Package
- Property Services Training Package

RIGHT TO EDUCATION

- SCHOOL AGED YOUTHS
- EXISTING WORKERS
- CONTINUING EDUCATION
- ADULT EDUCATION
- EDUCATION FOR DISADVANTAGED PEOPLE
- EQUAL OPPORTUNITY IN EDUCATION
- REMOVING THE DISCRIMINATIONS IN EDUCATION

EQUAL OPPORTUNITY IN EDUCATION IS ONE OF THE IMPORTANT INDICATORS OF A DEMOCRATIC COUNTRY



FEATURES OF TRAINING PACKAGES

- Preliminary Information .
- Important Note to Users
- Overview of Training Packages
- The specific Industry
- Industry Coverage
- Regulatory arrangements
- Statutes, regulations and codes of practice
- Content of this Training Package
- Structure and Overview
- Competency Standard Units – Content and scope
- Layout of this Training Package
- AQF qualifications in this Training Package
- List of Imported Units of Competency
- Language, Literacy, Numeracy
- Access, Equity and Cultural Diversity
- Responsibility for Training Package Maintenance

HOW THE TRAINING PACKAGE FULFILLS THE RIGHT TO EDUCATION

- Assessment System Overview
- Benchmarks for Assessment
- Australian Quality Training Framework Assessment Requirements
- Pathways
- Pathway 1: New Entrant Competency Development
- Pathway 2: Recognition of prior learning/current competencies (RPL/RCC)
- Pathway 3: Recognition of Other Industry/Enterprise Standards .
- Assessment Principles within the particular Industry

FEATURES OF TRAINING PACKAGE

- Assessment Principles
- Assessment Judgments .
- Assessment Processes
- Opportunities for Combined Approaches
- Assessor Requirements
- Assessors, Technical Experts and Workplace Supervisors

FEATURES OF TRAINING PACKAGE

- Team/Panel Assessment
- Designing Assessment Tools
- Assessment Methods
- Conducting Assessment
- Industry-preferred assessment process
- Guidelines for Designing Assessment Materials
- Assessment Material Design Process
- Maintenance of Assessment Guide

THE TRAINING SYSTEM THAT PROMOTES THE CAREER DEVELOPMENT OF LEARNERS

- - **Validity**
- **- Reliability**
- **- Flexibility**
- **- Fairness**
- **- Sufficiency**

HOW SHOULD MYANMAR ADULT & VOCATIONAL EDUCATION SYSTEM BE FRAMED?

Validity

- The adult & vocational education system that provides the real knowledge & skills required for practical work performance.

Reliability

- The adult & vocational education system that provides the good quality of knowledge & skills.

HOW SHOULD MYANMAR ADULT & VOCATIONAL EDUCATION SYSTEM BE FRAMED?

Flexibility

- The adult & vocational education system that promotes the working people for career development.

Fairness

- The education system for all citizens.

Sufficiency

- The education system that equips the sufficient knowledge and skills in line with modern and international technology.

Why Australian Training Packages should be studied

- Vocational education system changes from traditional class room based & academic focus to work performance competency based training.
- How competency based training can be applied in Myanmar
- Recognising Prior Learning & Work experience into formal qualification system used in Australian Vocational Education System & how the skills of Myanmar workers can be converted to formal qualifications

Why Australian Training Packages should be studied

- Syllabus& Curriculum Resources of Australian Vocational Training Packages & explore the components useful to Myanmar Technical & Vocational Education.

UEE11_R1.5

UEE11 Electrotechnology Training Package

1.1.01 Electrotechnology Industry Qualifications Framework
1.1.02 Qualification Pathways
1.1.03 Qualification Employability Skills Statements
1.1.04 Qualification Scope, Work Function and Environment
1.1.05 Qualifications and Packaging Rules
1.1.06 Skill Sets
1.2.01 Competency Standards
1.2.02 Contextualisation of Competency Standard Units by RTOs
1.2.03 Components of Units of Competency
1.2.04 Employability Skills in Units of Competency
1.2.05 Competency Standards for the Electrotechnology Industry
1.2.06 Competency Standard Units for the Electrotechnology Industry
1.2.07 Maintenance of Competency Standards
1.2.08 Index of Competency Standard Units
1.2.09 Unit Relationships UEE11 V1 to UEE07 V4
1.3.00 Assessment Guidelines
1.3.01 Introduction
1.3.02 Assessment System Overview
1.3.03 Pathways

Qualification Framework

This section describes how the qualifications, scope/descriptions, composition and content are structured. Completion and issuance requirements are provided as well as advice on flexibility arrangements, with entry and exit pathways and articulation arrangements. Titles and codes of the list of qualifications to be issued are also included

Competency Standards

This section describes how the competency standards were developed (in broad terms), the industry coverage they apply to, as well as the format and construction of the individual Competency Standard Units.

The index of Competency Standard Units and their scope/description is included in this part. Matters related to language, literacy and numeracy, access, equity and cultural diversity and regulatory arrangements, for which the Competency Standard Units may apply, is also included.

The Definitions/Glossary and Essential Knowledge and Associated Skills sections of the Training Package link directly to the Competency Standard Units and no Unit is to be used in isolation or exported without these interrelated components.

Part 3 – Assessment Guidelines

This section outlines how the assessment guidelines inform a Registered Training Organisation (RTO) on the infrastructure requirements they will need to enable them to carry out training delivery assessment activities related to the Training Package. The guidelines include assessment systems, the role of RTOs, assessment pathways, recognition arrangements, assessor qualifications and sources of information.

Volume 2: Competency Standard Units — Content and scope

Volume 2 contains the Competency Standard Units in their respective disciplines.
Volume 2 also contains the Essential Knowledge and Associated Skills, a Matrix mapping the essential knowledge and associated skills (EKAS) to the Unit and to the Definitions/Glossary section, which provides a description of relevant terms and vocabulary that appear in this Package. Also included are definitions relating to literacy and numeracy skills.
Note: The two volumes form an integrated whole and must not be used independently of each other.

Volume 1

Preliminary Information

The Electrotechnology Industry

Overview of Training Packages

The Electrotechnology Industry Training Package

Part 1 Qualifications Framework

Part 2 Competency Standards Overview and Index

Part 3 Assessment Guidelines

Appendix A – Australian Apprenticeships

Appendix B – Sample Assessment Instruments

Enclosures

- Enclosure A: List of Sample Assessment Instruments
- Enclosure B: Administrative Forms
- Enclosure C: Glossary of Terms

Volume 2

Preliminary Information
Part 1 Definitions/Glossary
Part 2 Competency Standards
2.1 Competency Standard Units

- A – Assembly
- B – Broadcast
- C – Commercial
- D – Computer systems
- E – Cross discipline
- F – Data and voice communications
- G – Electrical
- H – Electronic
- I – Instrument and Control
- J – Refrigeration and Air Conditioning
- K – Renewable and sustainable energy
- L – Imported
- M – Hazardous areas
- N – Rail systems
- P – Restricted and specialist
- R – Research

2.2 Essential Knowledge and Associated Skills
Volume of: Knowledge and Associated Skills — Reference Codes and Reference Names
Table of Essential Knowledge and Skills to Unit Matrix

UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace

1) 1.1) Descriptor
This unit specifies the mandatory requirements of occupational health and safety and how they apply to the various electrotechnology work functions. It encompasses responsibilities for health and safety, risk management processes at all operative levels and adherence to safety practices as part of the normal way of doing work.

and Performance Criteria

ELEMENT		PERFORMANCE CRITERIA	
1	Prepare to enter a work area	1.1	Work area access permits are obtained from appropriate personnel according to established procedures
		1.2	Safe work methods for controlling risk obtained, read and understood prior to undertaking a work activity.
		1.3.	Preparations for electrical and non-electrical isolation are carried out to prevent creation of hazards from loss of machine/system/process control according to established procedures.
		1.4	Tools and equipment needed for the work are checked for safety and correct functionality according to established procedures and regulatory requirements.

Apply safe working practices.	2.1	Safe work methods for controlling risk are followed accurately.
	2.2	Workplace procedures for dealing with accidents, fires and emergencies are followed according to work procedures and scope of responsibility and competencies.

Follow workplace procedures for hazard identification and risk control	3.1	Hazards are identified and control measures implemented and monitored through active participation in the consultation process with employer and other employees.
	3.2	Hazards in the work area are recognised and reported to appropriate personnel according to established procedures.
	3.3	OHS records of incidents are completed in accordance with regulatory requirements and established procedures.
	3.4	Workplace instructions and training are followed accurately within established procedures.

REQUIRED SKILLS AND KNOWLEDGE

KS01-EE101 Occupational Health and Safety principles

Evidence shall show an understanding of Occupational Health and Safety to an extent indicated by the following aspects

T1 The basic legal requirements covering occupational health and safety in the workplace encompassing:

- underlying principles of OH&S
- general aims and objectives of the relevant state or territory legislation relating to OH&S.
- employer and employee responsibilities, rights and obligations.
- major functions of safety committees and representatives.
- powers given to Occupational Health and Safety Inspectors
- housekeeping and potential hazards in relation to improper housekeeping
- selecting appropriate personal protective equipment (PPE) given hazardous situations

T2 The work environment encompassing:

- typical hazards associated with a range of work environments
- procedures used to control the risks associated with these hazards
- principles of risk assessment / management and state the purpose of each.
- hierarchy of OH&S hazard control measures.
- required documentation for risk assessment.
- commonly used workplace safety signs.
- workplace emergencies that pose a threat to health and safety and suitable procedure for an emergency workplace evacuation.
- appropriate fire extinguisher for a given type of fire.
- requirements for the location, mounting and maintenance of portable fire extinguishers.
- basic process of fighting a fire.
- Importance of safe premises, buildings and security in an industrial setting and the consequences of non- compliance.

T3 Manual Handling encompassing:

- typical manual handling injuries and the effect they can have on lifestyle
- situations that may cause manual handling injuries
- correct procedures for lifting and carrying to prevent manual handling injuries

T4 Chemicals in the workplace encompassing:

- hazardous substances and dangerous goods.
- classification of chemicals as hazardous substances and/or dangerous goods
- requirements for labelling of chemicals in the workplace
- safe storage procedures for chemicals
- purpose and interpretation of material safety data sheet (MSDS)

T5 Working at heights encompassing:

- dangers associated with working on ladders and scaffolds
- identification of work area as a height risk and use appropriate safety equipment to prevent a fall
- selecting an appropriate ladder for a given situation and perform a safety check before use
- precautions that should be taken when ascending and working off a ladder
- precautions that should be taken when working on and around a scaffold and elevated platforms.

T6 Confined spaces encompassing:

- hazards associated with working in a confined space
- identifying workplace situations that could be classified as a confined space
- control measures for working in a designated confined space

T7 Physical and psychological hazards encompassing:

- short and long term effects of excessive noise and techniques to avoid damage to hearing due to excessive noise
- effects of vibration on the human body and work practices to protect against vibration
- effects of thermal stress on the human body and work practices to protect against thermal stress
- effects of ultraviolet (UV) radiation on the human body and work practices to protect against UV radiation.
- dangers associated with laser operated equipment and tools and suitable protective measures to overcome the danger.
- occupational overuse syndrome, how it occurs and means to overcome it
- factors that cause stress in the workplace, symptoms of a person suffering from stress and personal stress management techniques
- detrimental effects and dangers of drug and alcohol use in the workplace

T8 Working safely with electricity encompassing:

- effects of electric shock on the human body
- common causes of electrical accidents
- precautions that can minimise the chance of electric shock (earthing, extra low voltage, fuses, circuit breakers and residual current devices – RCDs)
- protection offered by a residual current device (RCD)
- need for ensuring the (safe) isolation of an electrical supply
- appropriate method of removing an electric shock victim from a live electrical situation

T9 Life support - CPR in the workplace encompassing:

- First Aid.
- responsibilities of the First Aider.
- priorities of first aid management for any accident or injury.
- procedures required at an accident scene.
- legal and ethical issues, which may impact on the management of care.
- 'Duty of Care'.
- examination of a casualty for injuries.
- effect of cardio pulmonary arrest on the body.
- Managing simulated conditions of: airway obstruction; respiratory arrest and cardio pulmonary arrest,
- single and two-person cardio pulmonary resuscitation (CPR).
- signs and symptoms of an altered level of consciousness
- management of simulation of a casualty with an altered level of consciousness.
- signs and symptoms of shock.

EVIDENCE GUIDE

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

A	Preparing to enter the workplace including, the use of work permits and clearances and isolation permissions.
B	Understanding and following risk control safe work methods.
C	Applying work procedures and instructions as they apply to risk control measures.
D	Dealing with accidents and emergencies within the scope of responsibility.

E	Participation in consultation processes, identifying hazards and implementing and monitoring control measures.
F	Dealing with unplanned events

Electrical

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Electricity Supply

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http://www.filefactory.com/file/56saqflqmh41/n/UET12_R2.1.docm

Electrical Power Generation

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Automotive

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Manufacturing & Engineering (Mechanical)

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Marine

MAR_R2.0.docm (1.78MB)

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Textile

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Construction

CPC08_R9.0.docm (9.59MB)

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Information Technology

ICA11_R2.0.docm (5.27MB)

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Chemical

PMA02_2.pdf (1.92MB)
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PMA02_1.pdf (1.65MB)
http://www.filefactory.com/file/33ikm94dl8jb/n/PMA02_1.pdf

Manufacturing

MSA07_R8.4.docm (4.93MB)
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Gas

UEG11_R2.0.docm (5.44MB)
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Mining

MNM05_3.pdf (2.28MB)
http://www.filefactory.com/file/78fk485ew98v/n/MNM05_3.pdf

MNM05_2.pdf (2.29MB)
http://www.filefactory.com/file/72yjazer7njj/n/MNM05_2.pdf

MNM05_1.pdf (1.77MB)
http://www.filefactory.com/file/6ahwwdwosk8j/n/MNM05_1.pdf

THE END

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- Doctor of Education (STC Technological University)
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- Certificate of Proficiency (Electrical Fitter) (NSW VTT)
- Craft Certificate (Electronic-Computer System) (NSW VTT)
- Certificate III in Electrical Wiring (TAFE-NSW)
- Qualified Supervisor Certificate (Electrician) (NSW Electrician Licence)
- Teacher of Electrical Engineering, TAFE-NSW, Sydney Institute, Ultimo College + Program Leader –E-Learning IQY Technical College

Myanmar Engineering Council References

- the choice of the teaching-learning (delivery) methods.
- A balanced curriculum
- The curriculum shall integrate theory with practice through adequate exposure to laboratory work and professional engineering **(MEng C)**
- Time allocation
- Credit points

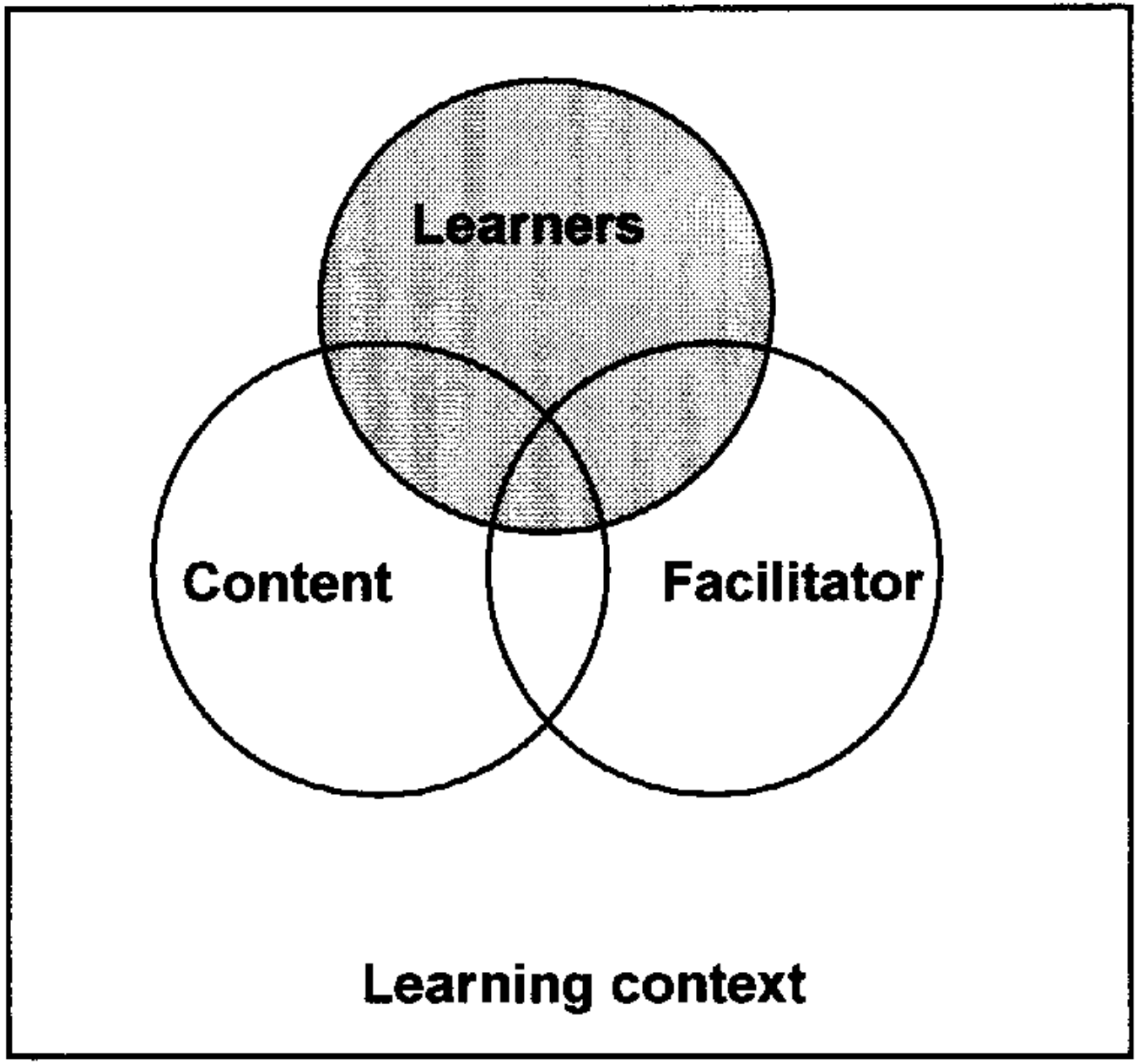
First of all, what is learning? Learning is a personal process, which occurs internally. Learning can involve:

- growth of knowledge
- development of skills
- change of attributes.

Models, like myths and metaphors, help us to make sense of information. A model can offer the means for understanding an otherwise incomprehensible problem. Models can provide structure and meaning; they often help us to visualise a concept or problem, breaking it down into discrete and manageable parts. As such, models are very useful in learning.

Facilitating learning

When it comes to facilitating learning, there are three things the facilitator need to manage: the learners, the content and themselves. These need to be considered separately and collectively and managed in the context of the learning environment. In the beginning, it can feel a bit like running a three-ring circus! As you can imagine, undertaking such a process also requires considerable preparation to make sure that everything goes smoothly. Armed with a clear plan, an understanding of how people learn, and an increased awareness of the part you play, you will be well on the way to being a success.


Learners
Content
Facilitator
Learning context

Knowles' andragogical model of learning

The need to know

Adults need to know why they are learning something before undertaking to learn it. When adults undertake to learn something on their own, they invest considerable energy determining the benefits they will gain from learning it and the negative consequences of not learning it. Consequently, one of the first tasks of the facilitator of learning is to help the learners become aware of the 'need to know'.

The role of learners' experience

Adults have a variety of life experience that represents a rich resource for learning. To capitalise on adult learners' experience, facilitators can use techniques that tap into these—group discussion, storytelling, simulation exercises, problem-solving activities, case studies and other interactive strategies. While the richness of experience is a valuable resource for learning, can also present some challenges, as these experiences can be filled with bias and presupposition which may impact on our perceptions.

Readiness to learn

Adults are ready to learn those things they need to know and do, in order to cope effectively with their real life situations. 'Readiness to learn' occurs strongly when adults move from one developmental stage to the next. Timing learning experiences to coincide with those developmental tasks is obviously important.

Orientation to learning

Adults are motivated to learn something to the extent that they perceive that it will help them perform tasks or deal with problems that they are likely to encounter. They learn most effectively when learning is presented in the context of application to real life situations.

Motivation

While adults respond to some external motivators (better jobs, promotions, higher salaries etc), the most potent motivators are internal pressures (desire fo increased job satisfaction, self-esteem, quality of life). Generally, adults are motivated to keep growing and developing, however, this motivation is often blocked by barriers such as a negative self-concept, especially as a student; inaccessibility of opportunities or resources; time constraints; and programs that do not meet the needs of adult learners.

Another way of looking at the principles of adult learning

The Australian National Training Authority (ANTA) provided a number of principles of adult learning in 1995, which were slightly modified in 1998. The following list is a compilation of both sets of principles.

Active participation

Adults learn best when they actively participate; that is, when they are involve physically, intellectually or emotionally. Adults learn best by 'doing'.

Meaningful and relevant

How does it relate to me? Adults need to be able to relate to the material—to identify the meaning and relevance of the material to them and their situation.

Holistic learning

Adults like to know where this material fits in relation to the whole. Starting with the big picture, then dropping down into the specific details, provides a context for the material.

Multi-sensory learning

We have five senses—why limit learning to one sense? Instead, use a range of senses: sight, sound, taste, smell and touch. Using two or three senses in the learning experience increases the learners' capacity to understand and to retain the material.

- Active Participation---Practical/ Work-based Learning
- Meaningful & Relevant—Curriculum & Resource Planning
- Holistic Learning—Career objective link to outcome 7 objective of the course , subjects/ units and detailed contents plans
- Multisensory Learning—e-Learning, face to face, Educational Multimedia

Practiced and reinforced

Learners require appropriate time and opportunities to practice and reflect on what they have learnt and apply this material to their workplace context. Practice opportunities need to be provided for developing knowledge and skills and changing attributes.

Regular and useful feedback

Learners like feedback; they want to know how well they are doing. Feedback provided early in the learning experience can mean that learners practice and reinforce the correct behaviours, rather than reinforce incorrect information or behaviours. Feedback needs to be provided in a positive and constructive manner. When providing feedback, concentrate on the action or the behaviour and not on the person.

Reward

Learners respond differently to learning experiences, yet they all need to be able to identify the benefits and value of the experience. These benefits act as a reward for the work learners have done and help motivate further learning. Sometimes it is also valuable to provide external recognition and reward. It is very motivating to be told you have done well and your efforts are recognised and appreciated.

Behavioural learning theory

Observable behaviour rather than internal thought processes are the focus; in particular, learning is shown by a change in behaviour. Four key principles are considered to be important. They are:

- learning is better when the learner is active, not passive
- frequent practice is necessary for learning
- positive reinforcements, like rewards and successes, are encouraged
- objectives need to be clear, for example, performance criteria found in units of competency.

Information processing theory

This theory uses the computer as a model for human learning. The human mind, like the computer, takes in information; changes the form and content of this information; stores and locates it; and generates responses to it. The approach to learning here is primarily through the use and study of memory.

Cognitive learning theory

This theory is based on the cognitive process we use to acquire knowledge, which includes knowledge gained through perception, intuition and reasoning. The theory outlines an active mental process of acquiring, remembering and using knowledge.

Constructivist learning theory

This theory is based on the idea that learners construct knowledge for themselves. That is, each learner individually and socially constructs meaning as they learn. This then leads to a focus on the learner, rather than on the subje or the lesson to be taught, as it is the learner's thinking about the learning whic is the key to the learning taking place.

Learner/ students centred learning

- Teacher as facilitator—Provide tool, references, resources,
- Provide the students with the task.
- Ask them to do research themselves
- Present their work evidence portfolios
- Assess their work
- E-Learning is an effective way to provide a great deal of resources.

Situational approach to learning

The emphasis here is on learning being situation-based, that is, placed in a social context, like a workplace. Learning takes place through the relationships between people, and is based on the conditions that bring people together, allowing for particular pieces of information to take on relevance and meaning

Problem-based learning

This approach to learning recognises the need to develop problem-solving skil in order for learning to take place. The learning goals are the learners' abilities to solve the problem, present solutions and revise solutions when presented with additional information.

Project Design / Assessment

Further reading

Page 30 to 34 of Ref - 16.taadel401a Plan & Organize Group Base learning.pdf

Left Hemisphere Functions and Characteristics	Right Hemisphere Functions and Characteristics
Mathematical	Artistic
Verbal	Imaginative
Sequential	Random
Literal	Spatial
Logical	Holistic
Linear	Intuitive
Analytic	Synthesiser
Rational	Non-rational
Verbal	Non-verbal
Symbolic	Metaphoric
Abstract	Concrete
Temporal	Non-temporal

PART learning styles

Further reading

Page 36 to 37 of Ref - 16.taadel401a Plan & Organize Group Base learning.pdf

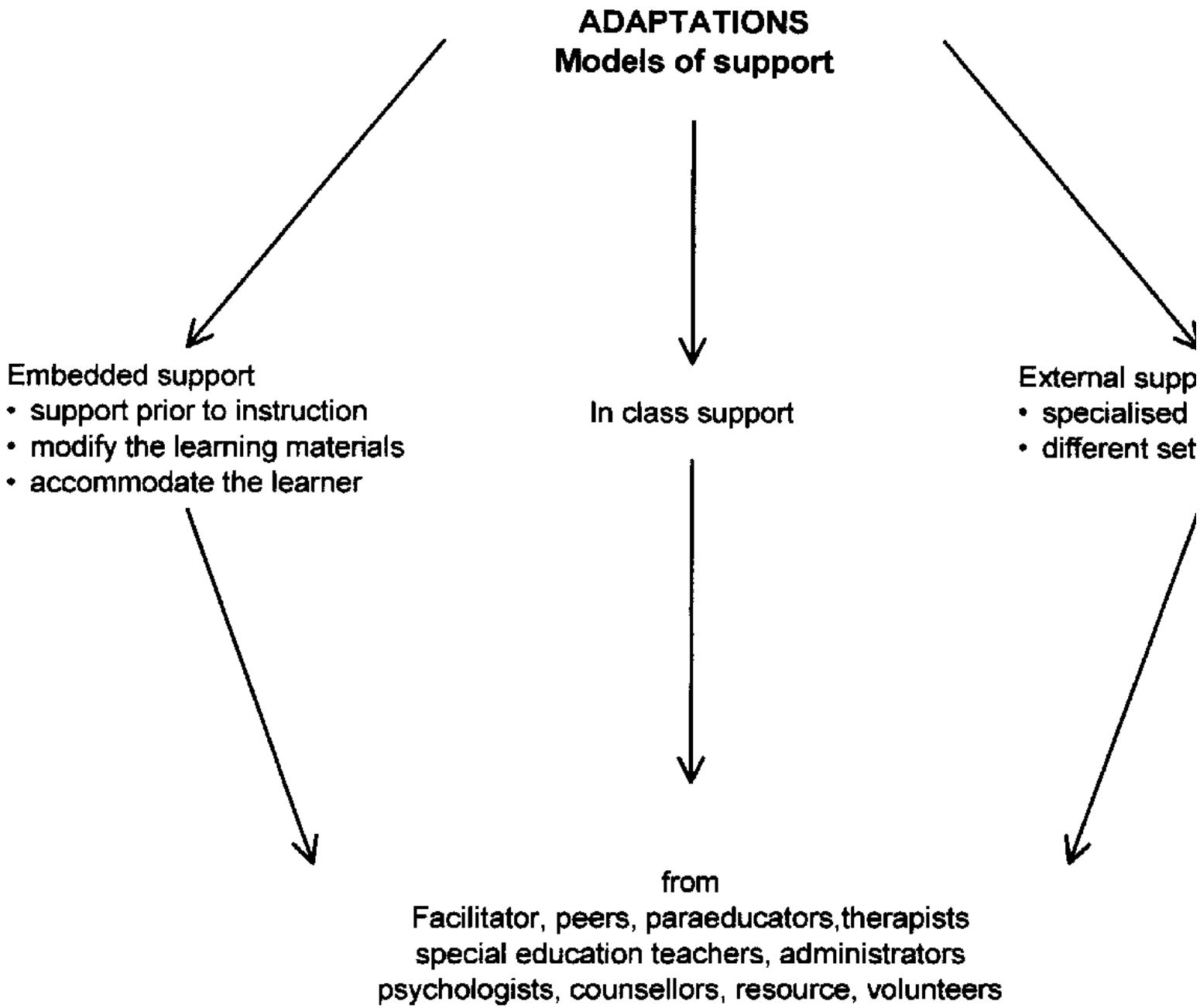
Global		Analytic
Big Picture		Details
Inter-connection		Specific
Broad overall approach		Step by step
Begin with the end in mind		Start at the beginning

- your roles and responsibilities as the facilitator
- the learning context
- the learner program requirements
- who your learners are, what their needs and characteristics are, and how you might go about supporting them
- how to identify potential risks to learners
- other factors that should be considered when planning and organising group-based delivery.

Learning program requirements

Learners, their needs and characteristics

Before planning training, it is important to get a clear understanding of exactly who the learners are and what they need to gain from the program.


ADAPTATIONS
Models of support
Embedded support
• support prior to instruction
• modify the learning materials
• accommodate the learner
In class support
External supp
• specialised
• different set
from
Facilitator, peers, paraeducators,therapists
special education teachers, administrators
psychologists, counsellors, resource, volunteers

Modify the learning materials

- Incorporate techniques such as modelling, demonstrating, visual/diagrammatic representation, opportunities to practise skills, peer support and repetition.
- Build underpinning knowledge and skills using support materials.
- Tape sessions for learners unable to attend class.
- Provide resources in large print (this may just involve making activity cards in slightly larger font to make them more accessible).
- Use videos and audio tapes to offer variety.
- Post class notes on a website.
- Build in information about discrimination—the law, direct and indirect forms of discrimination.
- Use video conferencing facilities to access learners.
- Provide different instructional materials to meet a learner's individual goals.

Accommodate the learner

- Draw on a range of resources from first language, including peer support.
- Listen to problems and help within limits.
- Arrange the timetable so it caters for people who work or have family commitments.
- Provide flexibility in the timing of assessment tasks.
- Use adaptive technology.
- Modify the number of items that a learner is expected to learn or complete.
- Extend the time allowed for learning, task completion or testing.
- Increase the amount of personal assistance with a specific learner.
- Modify the way a learner can respond to instruction (verbal, written, hands-on).
- Vary the extent to which a learner is actively involved in a task.
- Adjust the goals or outcome expectations while using the same materials.
- Adapt the skill level, problem type or the way learners may approach the work.

Provide in-class support

- Ensure appropriate physical and communication supports are available.
- Incorporate inclusiveness strategies so that learners learn from each other, not just the facilitator—for example, group sessions, peer tutoring, co-operative learning, reciprocal teaching.
- Introduce Indigenous protocols into learning relationships.
- Get learners to provide instructions and directions for activities.
- Build in activities in which learners and you, as facilitator, think about the values and beliefs they have with regard to diversity, including gender.
- Challenge the subtle forms of discrimination you witness within the practice environment.

Identifying risks

Preparing for facilitating

This Learning Topic explores what you need to do to prepare for facilitating a group and to prepare the content and structure of your learning resources.

There are many things you need to do:

- identify learning objectives, performance criteria and assessment methods (where required) and refine them
- identify, evaluate, select, modify and contextualise existing published learning resources and support materials
- develop an outline of the structure of each session
- develop specific session-based learning resources and activities
- identify specific facility, technology and equipment needs for each session
- identify and organise additional resourcing to meet identified learner support needs, where required.

The delivery plan

A delivery plan is sometimes referred to as a session plan. It could cover a series of sessions.

A delivery plan provides you with a step by step guide to follow. You will need to start with learning objectives and then develop a delivery plan that provides you with a guide for the effective facilitation of learning. You will structure information, develop resources and provide practice opportunities that meet the needs of your learners.

A delivery plan may include:

- duration of each activity or exercise

- formative assessment opportunities
- location of training
- number of learners
- activities to be used
- resources, for example, a whiteboard, overhead projector, handouts, or articles
- any additional requirements to meet special needs of learners
- OHS considerations to ensure a safe learning environment. This may be addressed under separate headings of venue, activities, equipment, or personnel as appropriate.

Learning objectives

Imagine what archery would be like without a target, or football without the goal posts—how would you know if you were successful? This is what it is like to run a session without planned and documented learning objectives. How would you know where you were going? How would you know if you had succeeded?

Learning objectives state what the learner is to learn as a result of participating in the program or session. Due to the diversity in the sector, you may find different kinds of learning objectives. They could include:

- units of competency
- learning objectives
- individual or group objectives
- generic or technical skills.

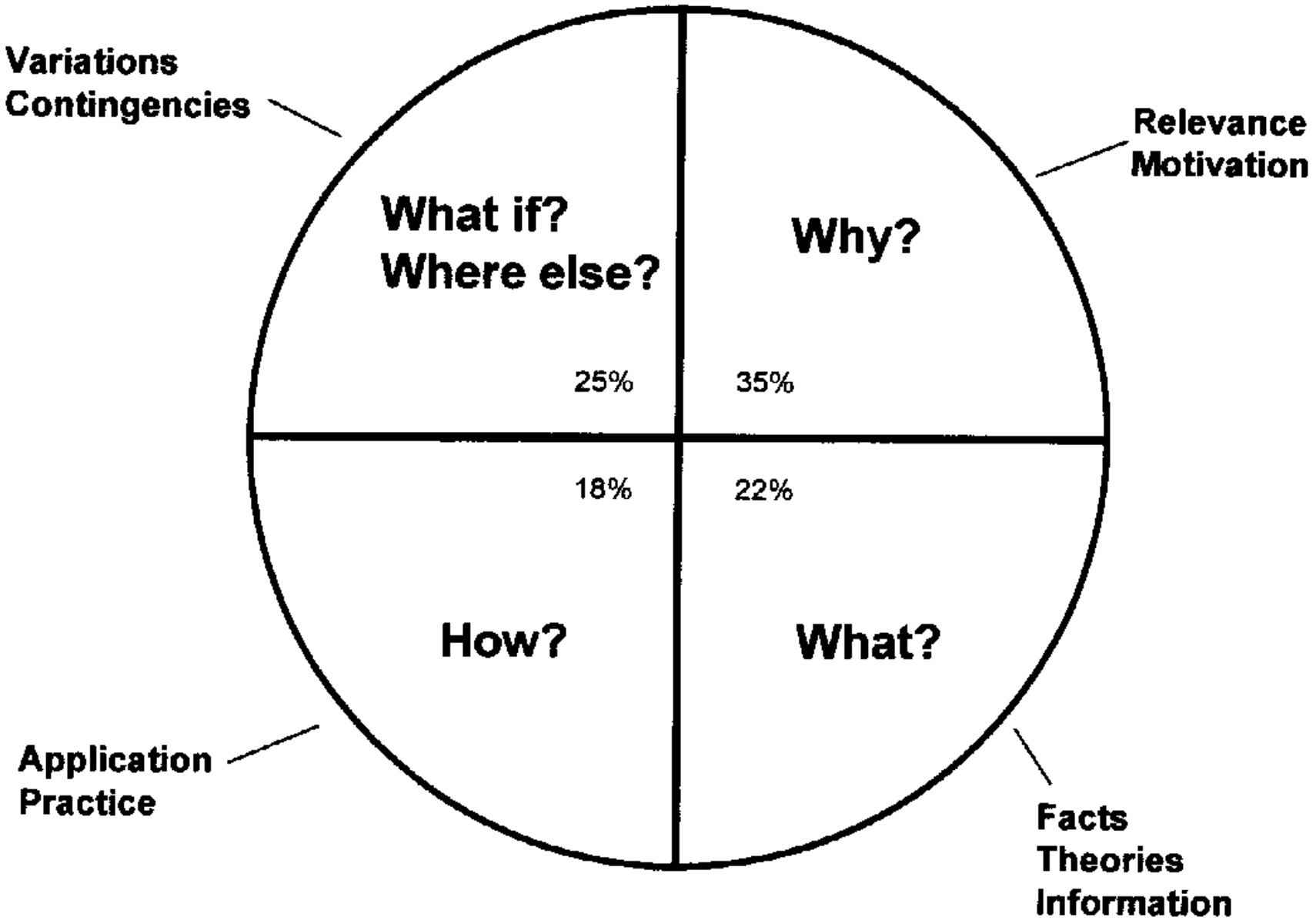
Assessment methods

You need to find out:

- what responsibility you will have for assessment
- who else may be involved in assessing your learners
- what you need to do if others are responsible for assessing your learners.

Checklist for selecting resources

- ❒ Is the resource current?
- ❒ Does the resource cover the competency standards or learning objectives that need to be addressed in the learning program?
- ❒ Does the resource provide clear and comprehensive information?
- ❒ Does the resource clearly identify its purpose and objective?
- ❒ Is the resource able to be contextualised to meet your learning needs?
- ❒ Does the resource respond to access and equity issues?
- ❒ Does the resource offer flexibility for delivery and assessment?
- ❒ If a course has been selected, do the hours and cost seem reasonable?
- ❒ Is the resource recognised by accredited bodies or organisations as covering the training requirements?


Variations
Contingencies
What if?
Where else?
25%
Why?
35%
Relevance
Motivation
How?
18%
What?
22%
Application
Practice
Facts
Theories
Information

Learning activities may include:

- discussion
- role-plays
- written tasks
- slides and/or video presentations
- case studies
- solving problems
- 'thinking skills' exercises
- collaborative learning projects
- workplace practice
- question and answer

- 'thinking skills' exercises
- collaborative learning projects
- workplace practice
- question and answer
- online research
- self-paced materials
- group learning activities
- individual activities
- practice
- demonstration
- a combination of the above.

Further reading

Page 77 to 84 of Ref - 16.taadel401a Plan & Organize Group Base learning.pdf

Work based learning.pdf

22.taadel404a Facilitate work based learning.pdf

individual learning.pdf

20.taadel403a Facilitate individual learning.pdf

Distance based learning

24.taadel405a Coordinate 7 facilitate distance based learnin.pdf

Group Base learning.pdf (3.25MB)
http://www.filefactory.com/file/266najoy91o3/n/16.taadel401a_Plan_&_Organize_Group_Base_learning.pdf

Facilitate Group based learning.pdf (2.81MB)
http://www.filefactory.com/file/1tvk73q17j43/n/18.taadel402a_Facilitate_Group_based_learning.pdf

Work based learning.pdf (4.15MB)
http://www.filefactory.com/file/24apg5s5n0fx/n/22.taadel404a_Facilitate_work_based_learning.pdf

individual learning.pdf (1.94MB)
http://www.filefactory.com/file/4nmwy8ldewh1/n/20.taadel403a_Facilitate_individual_learning.pdf

Distance based learning (2.56MB)
http://www.filefactory.com/file/3w2b2mdycbx1/n/24.taadel405a_Coordinate_7_facilitate_distance_based_learnin.pdf

Educational Theory Resources

ED 103 Teaching Practice

http://www.filefactory.com/file/1o732n0j46mf/ED%20103%20Teaching%20Practice.zip

ED 105 Principle of Learning

http://www.filefactory.com/file/7660l6kjr8sx/ED%20105%20Principle%20of%20Learning.zip

ED 107 Teaching & Learning

http://www.filefactory.com/file/6u5o455lyqj7/ED%20107%20Teaching%20%26amp%3B%20Learning.zip

ED 401 Adult Learning Technology

http://www.filefactory.com/file/68y4bd94ianb/ED%20401%20Adult%20Learning%20Technology.zip

TAADEL301A

Provide Training through instruction and demonstration of work skills

Element	Description	Document
1.1 to 1.6	1.1 Information about learner characteristics and their learning needs is gathered 1.2 A safe learning environment is confirmed 1.3 Learners are notified of the training details 1.4 Instruction and demonstration objectives are gathered and checked and assistance is sought if required 1.5 Relevant learning resources and learning materials are obtained and checked for relevance and assistance is sought if required in interpreting the contextual application 1.6 Any equipment or physical resources required for the demonstration are organised	E1

Element	Description	Document
	2.1 Interpersonal skills are used to establish a safe and comfortable learning environment 2.2 The learning program and/or delivery plan is followed to ensure all learning objectives are covered 2.3 Learners are briefed on any occupational health and safety (OHS) procedures and requirements prior to and during training 2.4 Techniques are used to structure, pace and enhance learning 2.5 Communication skills are used to provide information, instruct learners and demonstrate relevant work skills 2.6 Opportunities for practice are provided during instruction and through work activities 2.7 Feedback on learner performance is provided and discussed to support learning	

Element	Description	Document
	3.1 Measures are used to ensure learners are acquiring and can use new technical/generic skills and knowledge 3.2 Personal delivery style and performance in providing instruction and demonstration is reviewed and strategies for improvement are reflected upon 3.3 Learner records are maintained, stored and secured in accordance with legal/organisational requirements	

TAADEL401A

Plan and organise group-based delivery

Element	Description	Document
	1.1 The learning context is established and the organisational arrangements for delivery are confirmed 1.2 The learning program documentation is accessed, read and interpreted to determine delivery requirements 1.3 Group and individual learning needs and learner characteristics are identified using available information and documentation 1.4 Processes to identify learner support requirements are undertaken 1.5 Constraints and risks to delivery are identified and assessed 1.6 Personal role and responsibilities in the planning, delivery and review of training are confirmed with relevant personnel	

Element	Description	Document
	2.1 Specific learning objectives and assessment activities (where required) are refined in accordance with learning program requirements and specific needs of individual learners 2.2 Ideas for managing the delivery are generated using knowledge of learning principles and learning theories and reflect the learning needs and characteristics of the group 2.3 Existing learning resources, learning materials and documented learning activities identified in the learning program are evaluated and selected for use in the specific delivery context 2.4 Session plans are developed and documented for each segment of the learning program to be addressed	

Element	Description	Documents
	3.1 Selected existing learning resources, learning materials and learning activities are modified and contextualised for the particular group 3.2 Additional new, relevant and engaging learning activities and associated learning materials are developed and documented to meet specific session requirements based on the application of learning principles and learner styles of individuals and the group 3.3 All learning materials required by learners are finalised and organised in time for delivery 3.4 Specific facility, technology and equipment needs for each session are identified and organised in time for delivery 3.5 Additional resourcing to meet identified learner support needs is identified and organised, where required, in time for delivery 3.6 The overall delivery plan is confirmed with relevant personnel	

TAADEL403A

Element	Description	Documents
	1.1 The need for individual learning/facilitation in the learning area is identified 1.2 The goals for learning for individual learning/ facilitation are identified and discussed with relevant persons 1.3 Appropriate individual learning/facilitation techniques and processes are identified and documented to support individual learning needs and goals 1.4 Evaluation processes are developed and agreed 1.5 Organisational support for implementation is obtained, where relevant	

Element	Description	Documents
	2.1 The individual's learning style, learner characteristics and the context for learning are identified 2.2 The appropriate technique/process to facilitate individual learning is selected or organised and the basis of the technique/process is explained and discussed with the individual learner 2.3 The boundaries and expectations of the learning/ facilitation relationship are clarified and agreed using effective communication and interpersonal skills 2.4 Any equity or additional support needs are clarified 2.5 An individualised learning plan is developed, documented and discussed with the learner	

Element	Description	Documents
	3.1 Preparation for each meeting/session is evident	
	3.2 Effective communication and interpersonal skills are used to grow the relationship and sustain active participation	
	3.3 Structured learning activities are developed to support and reinforce new learning, build on strengths and identify areas for further development	
	3.4 Leadership and motivational skills are demonstrated to enable the learner to take responsibility for learning	
	3.5 Learner cues are observed and changes in approach are made, where necessary, to maintain momentum	
	3.6 Ethical behaviours are practised at all times	
	3.7 Regular meetings are agreed to by both parties and scheduled to monitor the effectiveness of the learning/facilitation relationship	
	3.8 Appropriate documentation to support the relationship is mutually developed and maintained	

Element	Description	Documents
	4.1 Tools and signals are used to determine readiness for closure of individual learning/facilitation relationship 4.2 The closure is carried out smoothly using appropriate interpersonal and communication skills 4.3 Feedback is sought from the learner on the outcomes achieved and the value of the relationship 4.4 The impact of the learning/facilitation relationship is reviewed using identified evaluation processes 4.5 Self evaluation and reflection on own performance in managing the relationship is carried out and areas for improvement are identified 4.6 The outcomes of the learning/facilitation relationship and evaluation of the process are documented and filed in accordance with legal, organisational and personal requirements	

TAADES402A

Design and develop learning programs

Element	Description	Documents
	1.1 Define the parameters of the learning program in consultation with the client/s 1.2 Competency standards or other relevant specifications on which to base the learning program are identified, accessed and confirmed 1.3 Competency standards/other relevant specifications are read, analysed and interpreted to determine specific learning objectives/outcomes/goals, and language, literacy and numeracy requirements 1.4 The scope and breadth of the learning program is discussed and interpreted	

Element	Description	Documents
	1.5 The target group learners and their characteristics are identified and considered 1.6 Other sources of information to support the learning program are identified and accessed 1.7 The learning environment, operational resource requirements and safety implications are identified	

Element	Description	Documents
	2.1 Relevant learning strategy documentation is accessed and used to guide the learning program development, where appropriate 2.2 The competency/educational profile and learning styles of the target group learners are investigated to inform the learning program design 2.3 Research is conducted to identify existing learning programs and/or learning resources and learning materials which could be used and/or customised 2.4 A range of options for the learning program content is generated in collaboration with other persons and based on research findings and application of learning principles 2.5 Broad time frames, possible costs and logistics of the learning program are considered 2.6 The information and ideas are evaluated and the most appropriate option/s selected	

Element	Description	Documents
	3.1 The specific subject matter content is researched, developed and documented in accordance with agreed design option/s and based on application of learning principles 3.2 Existing learning resources, learning materials are accessed and evaluated for content relevance and quality 3.3 Selected learning resources, learning materials are customised, where appropriate, to suit the learning purposes and audience 3.4 New, relevant and engaging learning activities and related learning materials are developed and documented, based on application of learning principles 3.5 In a learning and assessment pathway, assessment requirements for the learning program are specified	

Element	Description	Documents
	4.1 The learning content is broken into manageable chunks/segments of learning and sequenced appropriately to enhance and support effective learning and to enable achievement of identified criteria 4.2 The time frame for each segment is determined and the overall time frame is finalised 4.3 The delivery strategies and assessment methods and tools are determined/confirmed 4.4 Organisational requirements to implement the learning program are identified and documented 4.5 The learning program is finalised and documented, outlining each part of the program	

Element	Description	Documents
	5.1 The learning program draft is reviewed in collaboration with key stakeholders using an appropriate evaluation tool 5.2 The evaluation feedback is gathered, summarised and analysed to enhance the quality of the content 5.3 The draft learning program is adjusted to reflect the review outcomes, where appropriate 5.4 Final approval is obtained from appropriate personnel 5.5 The learning program documentation is held in an accessible form and updated on a regular basis following implementation and feedback	

TAAENV401A

Work effectively in vocational education and training

Element	Description	Documents
	1.1 Relevant national vocational education and training policies and frameworks are accessed, analysed and applied to guide work practices and responsibilities 1.2 Key vocational education and training organisations and stakeholders are identified and accessed to inform and update work practices 1.3 Commonwealth and state/territory legislation and guidelines are accessed and used to ensure work practices comply with policy requirements 1.4 Sources of information and advice on vocational education and training policy and operating context are accessed on a regular basis and changes are noted	

Element	Description	Documents
	1.5 Opportunities are taken up to contribute to vocational education and training organisational policy developments 1.6 Vocational education and training terminology is used to communicate effectively within the sector	

Element	Description	Documents
	2.1 Relevant organisational documentation is accessed and used to inform, support and guide work roles and responsibilities 2.2 Work is conducted in accordance with the training and/or assessment organisation's quality assurance strategies, processes, policies and procedures 2.3 Ethical and legal responsibilities are adhered to in work practices 2.4 Work is undertaken in accordance with prevailing industrial and employee relations systems and practices 2.5 Feedback and advice on work quality is actively sought from colleagues and clients	

Element	Description	Documents
	3.1 Work is planned, prioritised and organised to achieve agreed and expected outcomes 3.2 Workloads are assessed and guidance/support is sought from relevant personnel where work issues arise 3.3 Relevant technological skills are used to enhance work outcomes 3.4 Work is undertaken in a collaborative manner with colleagues through sharing of information and ideas and working together on work outcomes 3.5 Feedback on managing work and professional relationships is obtained from clients and colleagues and is evaluated and acted upon	

Element	Description	Documents
	4.1 Clients and their needs and expectations form the basis for developing effective work practices and outcomes, within operational limits 4.2 Effective communication strategies are developed and utilised to establish and maintain client relationships 4.3 Processes for evaluating and improving client satisfaction are developed and built into work practices	

TAAENV402A

Foster and promote an inclusive learning culture

Element	Description	Documents
	1.1 Individual differences and clients with particular needs are acknowledged, respected and valued 1.2 Personal perceptions and attitudes about difference are examined and revised to improve communication and professionalism 1.3 Principles underpinning inclusivity are integrated into all work practices 1.4 Individuals' rights and confidentiality are respected	

Element	Description	Documents
	2.1 The ground rules for participation and behaviour with colleagues and clients are established through a cooperative, agreed process 2.2 Individuals are encouraged to express themselves and to contribute to the work and learning environment 2.3 Individuals are provided with opportunities to indicate specific needs to support their participation in learning and work 2.4 Relevant research, guidelines and resources are accessed to support inclusivity 2.5 Verbal and body language is sensitive to different cultures and backgrounds and differences in physical and intellectual abilities	

Element	Description	Documents
	3.1 Documented resources to support and guide inclusive practices are identified and used to inform work strategies 3.2 Support persons are identified and included in the work and learning process where appropriate and agreed to 3.3 Relevant professional support services are identified and accessed, as appropriate 3.4 Any physical environment support needs are acknowledged and incorporated into work practices, where practicable and approved by appropriate personnel 3.5 OHS issues associated with inclusivity are identified and addressed	

Element	Description	Documents
	4.1 Support and advice is provided to colleagues and clients to encourage new and ongoing participation in learning opportunities 4.2 The benefits of learning are explored with colleagues and clients 4.3 Learning and competency achievement is recognised and rewarded in the work and/or learning environment 4.4 Opportunities to develop own and others generic skills are identified 4.5 Multiple pathways to achieve own and others future learning goals are discussed	

Element	Description	Documents
	5.1 Effective work practices to enhance inclusivity and a learning culture are identified 5.2 Conscious actions are taken to modify and improve work practices 5.3 Strategies and policies to support inclusivity are regularly reviewed as part of continuous improvement processes 5.4 Proposed changes to relevant strategies and policies are documented and reported to higher management	

TAAENV403A

Ensure a safe and healthy learning environment

TAAENV403A

Ensure a safe and healthy learning environment

Element	Description	Documents
	1.1 The purpose and approaches of OHS in the learning environment are defined 1.2 Documentation outlining the OHS legal responsibilities of the various parties in the learning environment is accessed, read and interpreted 1.3 Organisational OHS documentation is identified and accessed	

Element	Description	Documents
	2.1 Sources of information are researched and accessed to identify hazards common within the industry in which the learning and/or assessment will take place 2.2 The learning environment is inspected prior to use and in consultation with various parties in order to identify hazards 2.3 Any specific OHS needs of learners and/or candidates are identified 2.4 Any potential hazards created by learners and/or candidates with specific needs are identified 2.5 Personal limitations and responsibilities in identifying hazards are recognised and specialist advisers are consulted when appropriate	

Element	Description	Documents
	3.1 The likelihood of injury as a result of exposure to the identified hazard/s is assessed 3.2 The severity of any potential injury, illness or negative/adverse outcome arising from the identified hazard is assessed for risk 3.3 Hazards are prioritised for action in consultation with various parties 3.4 Personal limitations in assessing risks are recognised and specialist advisers are consulted when appropriate	

Element	Description	Documents
	4.1 Risk controls are developed based on the hierarchy of control 4.2 A risk control action plan is identified and accessed or formulated in consultation with various parties 4.3 Actions within the control and responsibility of the trainer/facilitator and/or assessor are implemented 4.4 Outstanding risk control actions are referred to the various parties for implementation 4.5 Supervisory arrangements appropriate to learners and/or candidates levels of knowledge/skill/ experience are monitored to ensure their health and safety	

Element	Description	Documents
	5.1 Learners and/or candidates are provided with appropriate information related to OHS 5.2 Learners and/or candidates are assessed for knowledge of OHS requirements 5.3 Learners and/or candidates are supplied with personal protective equipment, if required 5.4 Learners and/or candidates are able to correctly use and maintain this, if required	

Element	Description	Documents
	6.1 Achievement against the risk control action plan is monitored and any issues addressed 6.2 The effectiveness and reliability of existing risk controls are confirmed with relevant parties 6.3 Effective hazard and incident reporting and investigation processes are confirmed on a continuing basis	

		ACSF Performance Variables Grid			
		SUPPORT	CONTEXT	TEXT COMPLEXITY	TASK COMPLEXITY
FIVE LEVELS OF PERFORMANCE	1	Works alongside an expert/mentor or where prompting and advice can be provided	Highly familiar contexts Concrete and immediate Very restricted range of contexts	Short and simple Highly explicit purpose Limited, highly familiar vocabulary	Concrete tasks of 1 or 2 steps Processes include locating, recognising
	2	May work with an expert/mentor or where support is available if requested	Familiar and predictable contexts Limited range of contexts	Simple familiar texts with clear purpose Familiar vocabulary	Explicit tasks involving a limited number of familiar steps Processes include identifying, simple interpreting, simple sequencing

		ACSF Performance Variables Grid			
		SUPPORT	CONTEXT	TEXT COMPLEXITY	TASK COMPLEXITY
FIVE LEVELS OF PERFORMANCE	3	Works independently and uses own familiar support resources	Range of familiar contexts Some less familiar contexts Some specialisation in familiar/known contexts	Routine texts May include some unfamiliar elements, embedded information and abstraction Includes some specialised vocabulary	Tasks involving a number of steps Processes include sequencing, integrating, interpreting, simple extrapolating, simple inferencing, simple abstracting

		ACSF Performance Variables Grid			
		SUPPORT	CONTEXT	TEXT COMPLEXITY	TASK COMPLEXITY
FIVE LEVELS OF PERFORMANCE	4	Works independently and initiates and uses support from a range of established resources	Range of contexts, including some that are unfamiliar and/or unpredictable Some specialisation in less familiar/known contexts	Complex texts Embedded information Includes specialised vocabulary Includes abstraction and symbolism	Complex task organisation and analysis involving application of a number of steps Processes include extracting, extrapolating, inferencing, reflecting, abstracting

5	Autonomous learner who accesses and evaluates support from a broad range of sources	Broad range of contexts Adaptability within and across contexts Specialisation in one or more contexts	Highly complex texts Highly embedded information Includes highly specialized language and symbolism	Sophisticated task conceptualisation, organisation and analysis Processes include synthesising, critically reflecting, evaluating, recommending

TEXT TYPE	PERSONAL AND COMMUNITY	WORKPLACE AND EMPLOYMENT	EDUCATION AND TRAINING
Procedural	Recipe	Standard operating procedures	Instructions for completing assessment task
Persuasive	Email to local council complaining about cat registration bylaws	Report for CEO presenting argument and recommendations for a particular piece of new equipment	Oral presentation on an issue in area of study/expertise
Informative	Club newsletter	Report on different approaches to risk management used in the industry	Research paper on main developments in OHS in the last 20 years

Creative	Poem	Design project	Advertising copy or short story
Technical	Explanation of parts of a camera	Instruction manual for a new piece of equipment	Report on advantages of a new computer system in a library
Regulatory	Council planning permission form	Industry standards list	Course completion requirements
Descriptive	Recount of trip to botanic gardens	Memo outlining new office furniture	Essay comparing two paintings

Indicators

Indicators are statements that briefly describe performance at each level of the five core skills. There are 11 Indicators; two each for Learning, Reading, Writing and Oral Communication and three for Numeracy (see Table 3).

Learning, Reading and Writing:

- the first Indicator describes a person's performance in terms of goals/purposes, meaning-making and overall management of the process
- the second Indicator focuses on practical strategies to assist with achieving the desired outcomes.

Oral Communication:

- the first Indicator focuses on speaking
- the second Indicator focuses on listening.

Numeracy:

- the first Indicator focuses on identifying (through reading, observing or listening) what mathematics is required
- the second Indicator focuses on mathematical procedures and processes
- the third Indicator focuses on representing and communicating the mathematics.

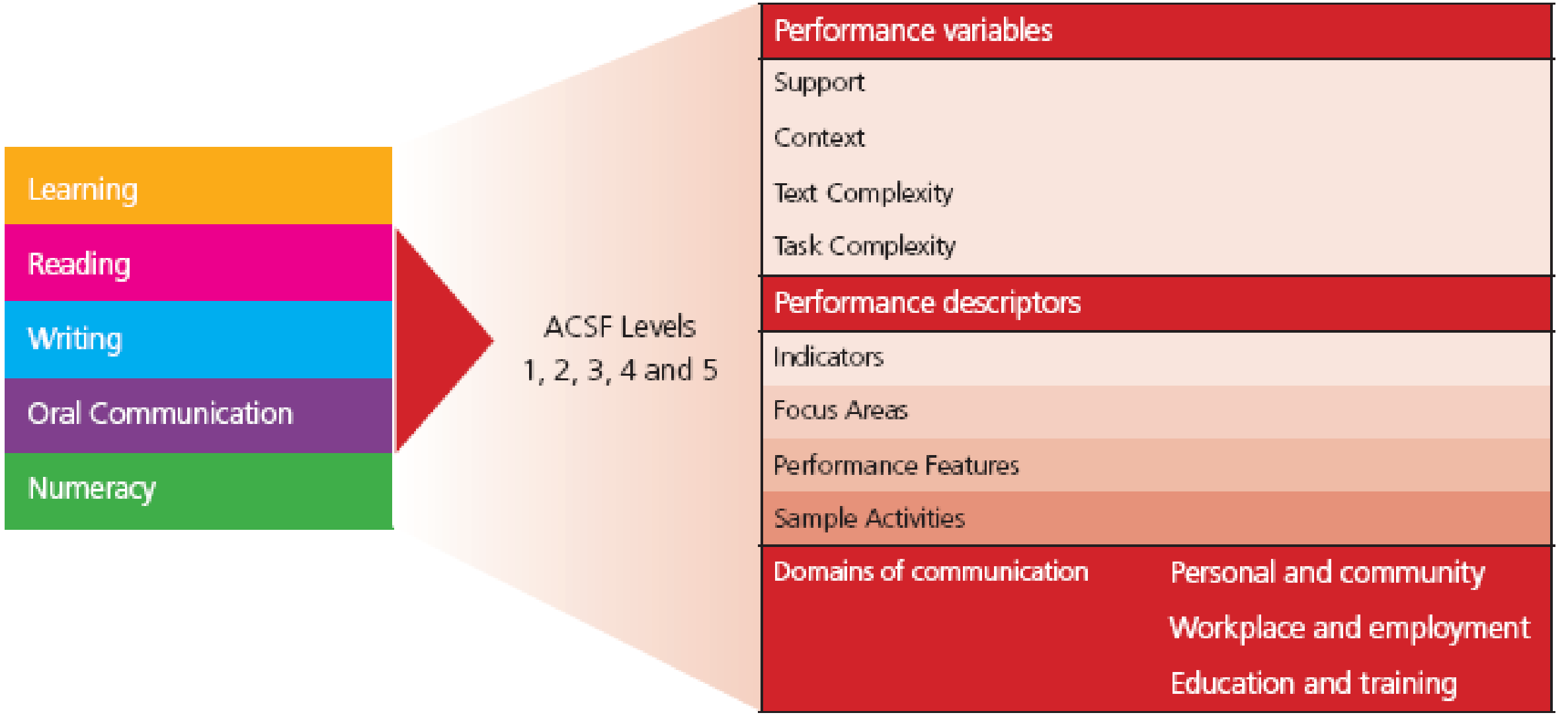
In all cases, it is important to recognise the critical interplay between the Indicators.

The Indicators are numbered according to the core skill, using a decimal system in which the whole number refers to the level and the decimal component to the core skill. For example, someone who has demonstrated level 1 in Learning will have achieved both 1.01 and 1.02. Someone exiting at Learning level 4 will have achieved both 4.01 and 4.02.

ACSF PERFORMANCE INDICATORS		
Core Skill	Indicator Number	Description
Learning	.01	Active awareness of self as a learner, planning and management of learning
	.02	Acquisition and application of practical strategies that facilitate learning
Reading	.03	Audience, purpose and meaning-making
	.04	Reading strategies
Writing	.05	Audience, purpose and meaning-making
	.06	The mechanics of writing

Oral Communication	.07	Speaking
	.08	Listening
Numeracy	.09	Identifying mathematical information and meaning in activities and texts
	.10	Using and applying mathematical knowledge and problem solving processes
	.11	Communicating and representing mathematics

Overview of the ACSF



	Core skills		Example tasks against ACSF performance levels		
	Level 1	Level 2	Level 3	Level 4	Level 5
Writing	Write name and time of signing on a time sheet	Write a telephone message	Complete an accident report form	Write minutes from a safety meeting	Write a Job Safety Analysis
	Write name, address and simple personal details	Fill in a leave form	Write a set of procedures for a work task	Write an email summarising work progress to members of the work team	Prepare job specifications

	Core skills		Example tasks against ACSF performance levels		
	1	2	3	4	5
Oral communication	Introduce self to others in a group	Listen to a series of instructions and accurately repeat them to a colleague	Listen and respond to a routine request	Deliver a presentation about a workplace procedure	Interview an applicant for a job

Oral communication

1	2	3	4	5
Follow simple verbal instructions for a work task	Follow a series of instructions related to a job	Explain basic technical procedures to a new worker	Listen to a colleague's complaint and paraphrase the problem	Present a report drawing on current research

Oral communication

1	2	3	4	5
Express opinion eg about cause of equipment failure	Convey information to others about a work task	Convey and explain current work information to others	Present information to clients	Present a tender to clients

	Core skills			Example tasks against ACSF performance levels		
		1	2	3	4	5
Numeracy		Estimate money required for simple purchase	Record numbers or quantities of materials	Calculate and compare costs of similar items from two sources	Apply formulae to measure 2 and 3 dimensional space	Research and investigate statistical data
	Estimate length of a familiar object (eg length of wood)		Locate address using a street directory	Make calculations including heights, areas, volumes and grades	Interpret and use ratios and scales to read and discuss design and dimensions on a plan	Select and use appropriate complex formulae for measurement (eg pitch of

Numeracy

1	2	3	4	5
Accurately record date and time using a calendar	Calculate cost of two items and estimate change	Measure items for work tasks using formal units (eg millimetres)	Use memory/square root functions on calculator to solve multi-step problems	Investigate and analyse construction options given particular financial constraints

Numeracy

1	2	3	4	5
Estimate length of a familiar object (eg length of wood)	Locate address using a street directory	Make calculations including heights, areas, volumes and grades	Interpret and use ratios and scales to read and discuss design and dimensions on a plan	Select and use appropriate complex formulae for measurement

	Level 1	Level 2	Level 3	Level 4	Level 5		Name of Student-
Learning		ü					Uses basic initiative to ask questions, learn and to research information
Reading		ü					Locates basic features on a set of plans - cannot yet read plans and job specifications
Writing		ü					Writes basic messages and instructions and can complete basic proformas
Oral Communication			ü				Listen and responds to routine requests and can explain technical procedures and information to others
Numeracy		ü					Accurately measures some items for work tasks, however cannot yet calculate areas, volumes and weight

I can ...	Yes	Sometimes	No
understand signs			
fill in a time sheet			
count and check change when shopping			
text a message			
use the internet to get information like telephone numbers			
fill in a leave form			
read a staff memo			
use a computer to email			
use a calculator			
read a work roster			
read a map or street directory			
read and understand the newspaper			

I can ...	Yes	Sometimes	No
use a dictionary			
write a report			
read books			

I can …	Yes	Sometimes	No
follow procedures for mixing a solution or follow a recipe			
calculate fractions, decimals and percentages			

Part B

You are required to read the following article in which you will be asked eight (8) questions.

Article

After conducting a training need analysis on the middle management team at "Bits N Bobs", it was discovered that whilst they were technically competent, there were large gaps in their management competencies.

The requirement of Bits N Bobs is that all management (junior through to senior) must hold a minimum of two (2) of the core units of competency and one (1) elective unit of competency, from the Certificate IV in Frontline Management. It is also mandated that one (1) of the core units must be "BSBMGT401A Show leadership in the workplace".

Bits N Bobs will allow their management team to provide evidence of prior studies (RPL) through any other Registered Training Organisation (RTO) other than the selected RTO, MIA Training Services.

MIA Training Services will offer two (2) options with the required training:

1. They will deliver the required “skill set” for the three (3) units of competency required by Bits N Bobs or
2. Candidates can also elect to undertake the whole Certificate IV in Frontline Management (four (4) core units plus six (6) elective units) via correspondence.

All management must have at least the minimum in place within six (6) months.

Questions

Q1. What is the name of the “mandated” unit of competency all management must have?

Q2. What are the minimum requirements for junior through to senior management?

Q3. List the three (3) methods of achieving the required outcomes for the management team at Bits N Bobs?

Q4. What is the name of the qualification that all the requirements are associated to?

Q5. If you were to complete the Certificate IV in Frontline Management, how many “CORE” units are you required to do?

Q6. If you were to complete the Certificate IV in Frontline Management, how many “ELECTIVE” units are you required to do?

Q7. Will Bits N Bobs accept my evidence that I completed the required three (3) units at another RTO?

Q8. Within what time frame are all management required to have at least the minimum requirements in place?

Q1. What is the name of the “mandated” unit of competency all management must have?

BSBMGT401A Show leadership in the workplace

Q2. What are the minimum requirements for junior through to senior management?

two (2) of the core units of competency and one (1) elective unit of competency, from the Certificate IV in Frontline Management It is also mandated that one (1) of the core units must be “BSBMGT401A Show leadership in the workplace

Q3. List the three (3) methods of achieving the required outcomes for the management team at Bits N Bobs?

1.to provide evidence of prior studies (RPL) through any other Registered Training Organisation (RTO) other than the selected RTO, MIA Training Services

2. They will deliver the required “skill set” for the three (3) units of competency required by Bits N Bobs

3. Candidates can also elect to undertake the whole Certificate IV in Frontline Management (four (4) core units plus six (6) elective units) via correspondence

Q4. What is the name of the qualification that all the requirements are associated to?

Certificate IV in Frontline Management

Q5. If you were to complete the Certificate IV in Frontline Management, how many “CORE” units are you required to do?

4

Q6. If you were to complete the Certificate IV in Frontline Management, how many “ELECTIVE” units are you required to do?

6

Q7. Will Bits N Bobs accept my evidence that I completed the required three (3) units at another RTO?

Yes

Q8. Within what time frame are all management required to have at least the minimum requirements in place?

six (6) months

The potential assessment methods were:

- Observation of the candidate at work/practical demonstration
- Role-play
- Customer feedback
- Written and verbal questioning

- Practical tasks
- Third party report
- Case study—customer complaints
- Journal
- Portfolio

Methods:

- observation of the candidate at the workplace interacting, serving and attending to customers
- verbal questioning that focuses on underpinning knowledge and contingency management for the three competencies
- role-play for customer complaints; working in a non-discriminatory manner or a simulation of processing particular payments such as gift certificates

- third party reports from a supervisor.
- Sequencing of assessment activities

- When planning the assessment, consideration was given to the sequence of assessment activities.

- The initial assessment could be verbal questioning to ensure candidates have the required knowledge. This could be followed by a role-play to establish that individuals have basic skills to serve customers.

- A series of observations on the-job could be supplemented by a third party report from the supervisor

OHS

- Find out the answers to the following questions in your practice environment.
- Who are the relevant OHS personnel?
- What are the main OHS considerations in your industry or area of assessment?
- What are the specific procedures relating to hazard identification?
- What risk control measures are in place?

- **What are the requirements for reporting hazards and incidents?**
- **What are the emergency procedures?**
- **What are the procedures for use of the relevant personal protective equipment?**
- **What OHS factors do you need to consider when planning assessment?**

COGNITIVE READINESS FOR ASSESSMENT-NEXT SLIDE

1 What Is Cognitive Readiness

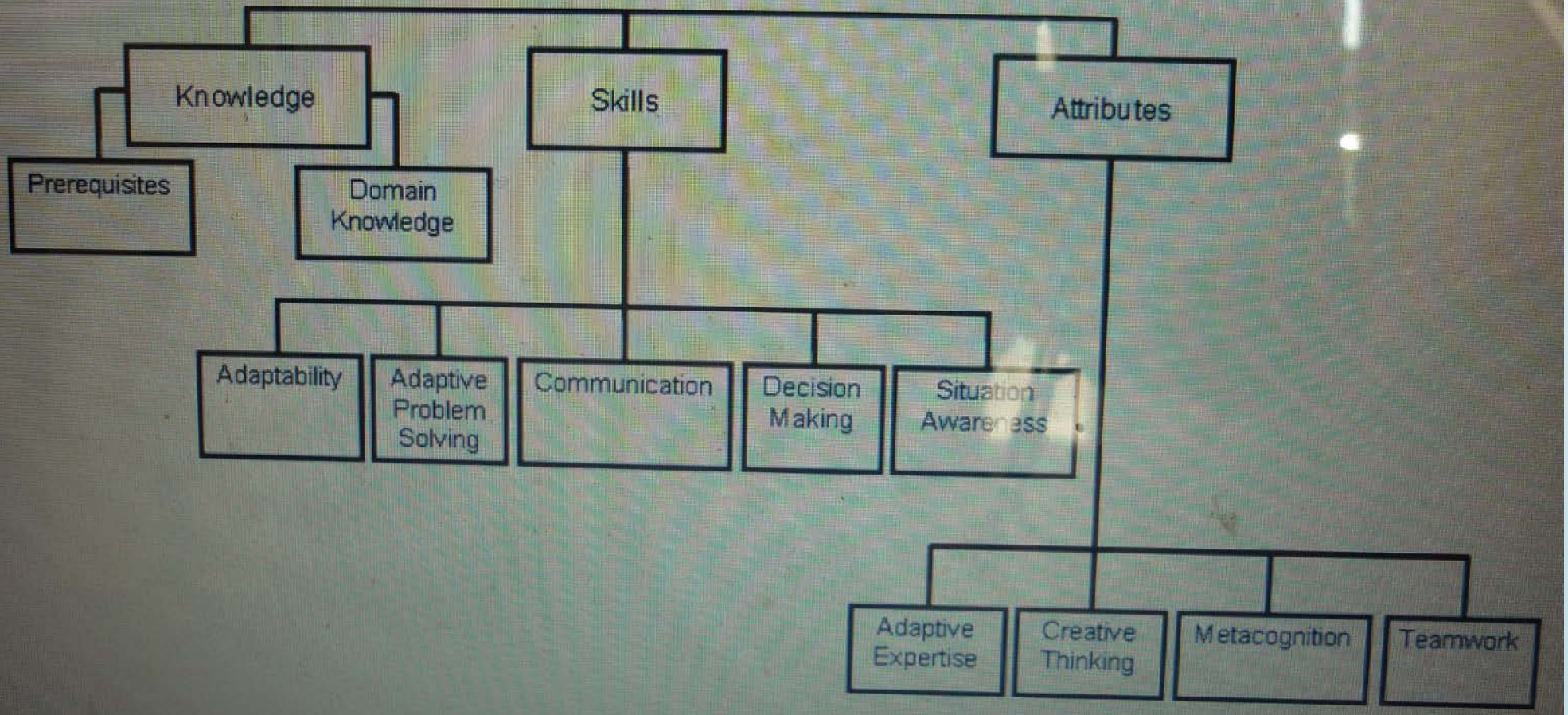


Fig. 1.1 Cognitive readiness model

Cognitive Readiness Model provides a comprehensive framework for understanding, training, and assessing cognitive readiness

Adaptability

Adaptability is a functional change (cognitive, behavioral, and/or affective) in response to actual or correctly anticipated alterations in environmental contingencies

(Banks, Bader, Fleming, Zaccaro, & Barber, 2001 , p. 4)

Adaptive expertise

Adaptive expertise entails a deep understanding of the knowledge of a problem domain. Adaptive experts understand when and why particular knowledge is appropriate or not

(Zaccaro & Banks, 2004 ; Ericsson, this volume)

Communication

Communication is the timely and clear provision of information and the ability to know whom to contact, when to contact, and how to report

(Hussain, Bowers, & Blasko-Drabik, this volume; Bowers, Braun, & Morgan, 1997)

Creative thinking

Creative thinking is a predictor of creative accomplishment.

Creative thinking is the ability to generate ideas and solutions that are novel, appropriate, and of high quality

(Hong & Milgram, 2008)

Decision making

Decision making involves the use of situation awareness information about the current situation to help evaluate the utility of potential courses of action and then execute a course of action and judge its effectiveness.

It involves the ability to follow appropriate protocols, follow orders, and take the initiative to complete a mission (Hussain et al., this volume)

Metacognition

Metacognition is awareness of one's thinking and is composed of two components: planning and self-monitoring. Planning means that one must have a goal (either assigned or self-directed) and a plan to achieve the goal.

Self monitoring means one needs a self-checking mechanism to monitor goal achievement

(O'Neil, 1999)

Situation awareness

Situation awareness involves being aware of what is happening around you, and understanding how information, events, and your own actions will affect your goals and objectives, both now and in the near future.

More formally, situation awareness can be defined as the

perception of elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future

(Endsley, 1995 , p. 36)

Teamwork

Teamwork is a trait of the individual that predisposes the individual to act as a team member. There are six teamwork processes:

(a)adaptability, (b) coordination, (c) decision making, (d) interpersonal, (e) leadership, and (f) communication

(O'Neil, Wang, Lee, Mulkey, & Baker, 2003).

A complementary definition is provided by Bowers

and Cannon-Bowers in this volume. Their definition of teamwork

includes knowledge of teamwork, leadership, mutual performance monitoring/backup, communication, interpersonal skills, and positive teamwork attitudes

Training and Assessment of Cognitive Readiness

A major strategy for the training of cognitive readiness is twofold: focusing on similarity and dissimilarity.

The first one encourages trainees to develop a rule of thumb that has fewer exceptions.

The second one focuses on the complexity of the domain and the prevalence of exceptions.

One training strategy is to expose the trainees to diverse situations like those they will encounter on their jobs.

Pulakos et al. (2002) empirically demonstrated a positive link between past experience in adaptive situations and adaptive performance.

Experiencing a variety of situations that require changes in action and adjustments to the environment does appear to aid in the adaptation process (Mueller-Hanson et al., 2005).

This is also consistent with the idea that adaptive performance is enhanced by gaining experience in similar situations (Pulakos et al., 2000).

Another training strategy is to use worked examples. Such a training strategy has been effective in teaching adaptive problem solving (Kirschner, Sweller, & Clark, 2006 ; Shen & O'Neil, 2008).

Worked examples are useful for two reasons. First, trainees may store these examples in memory and may subsequently recognize these types of exceptions when they encounter them again (Jones & Endsley, 2000).

Second, incorporating examples of exceptions into practice may encourage effortful processing, particularly if the exceptions are surprising and trainees have made errors on them (Ivancic & Hesketh, 2000).

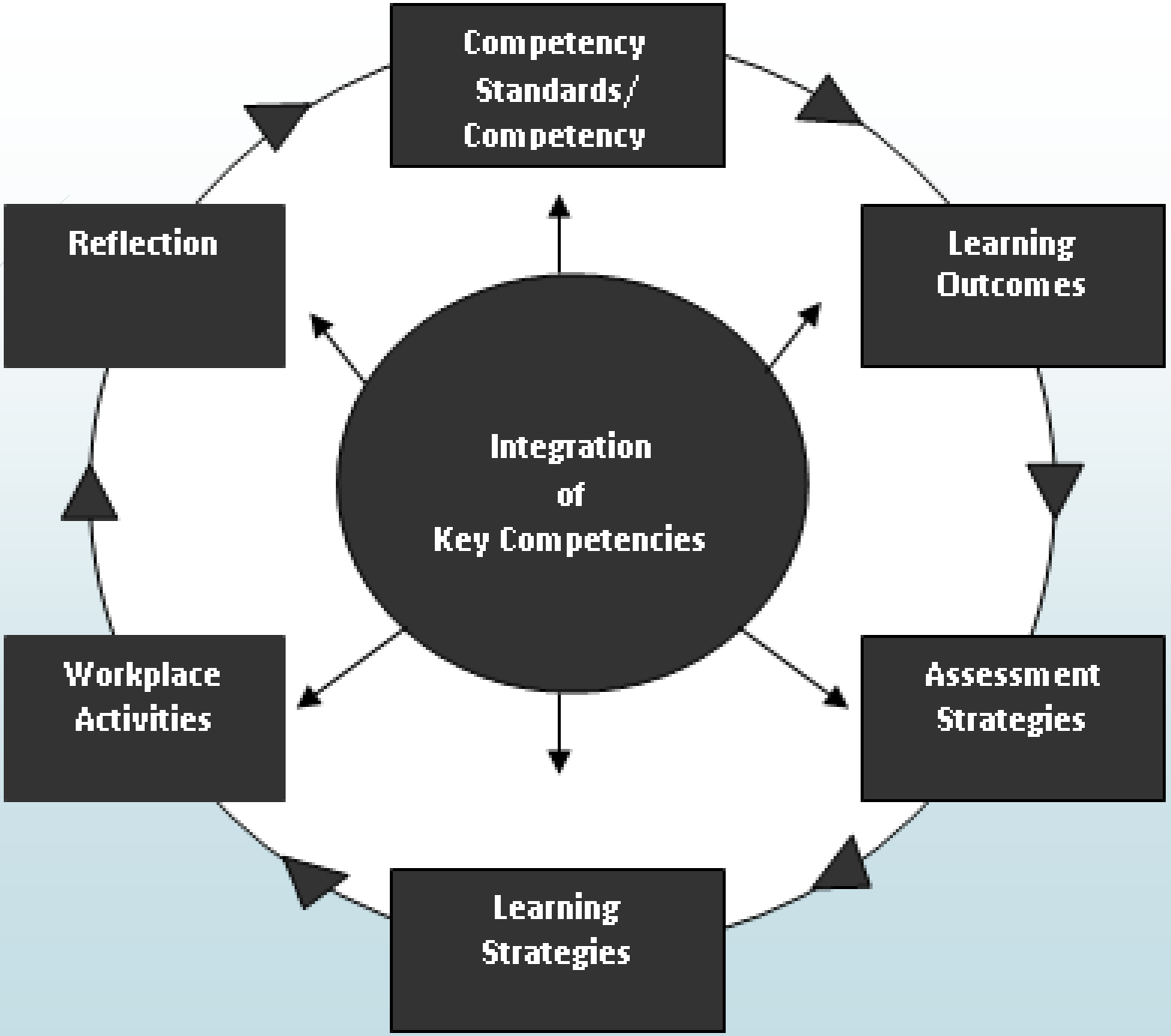
The authenticity of such worked examples would free up working memory for dealing with unpredictable situations.

A third training strategy is the use of games and simulations.

These technologies enable participants to see how their reactions and decisions influence not only a specific process but also the working of the system

(Bell & Kozlowski, 2002 ; De Jong, 2011 ; O'Neil & Perez, 2008).

COMPETENCY BASED ASSESSMENT---
ON NEXT SLIDE


Competency Standards/ Competency
Learning Outcomes
Assessment Strategies
Learning Strategies
Workplace Activities
Reflection
Integration of Key Competencies

TAAASS401A

Plan and organise assessment

Element	Description	Document
	1.1 Candidate/s are identified/confirmed and the purpose/s and context of assessment are established/ confirmed with relevant people in accordance with legal/organisational/ethical requirements 1.2 The assessment strategy is accessed and used to guide the development of the assessment plan, where applicable 1.3 The benchmarks for assessment are identified/confirmed and accessed	

Element	Description	Document
	.1 The assessment benchmarks are interpreted to determine the evidence and types of evidence needed to demonstrate competency in accordance with the rules of evidence 2.2 Where competency standards are used as benchmarks, all component parts of the competency standards, are addressed in defining and documenting the evidence to be collected 2.3 Any related documentation to support planning the assessment process is accessed and interpreted 2.4 Assessment methods and assessment tools are selected/confirmed which address the evidence to be collected in accordance with the principles of assessment	

Element	Description	Document
	2.5 Specific material and physical resources required to collect evidence are identified and documented 2.6 Roles and responsibilities of all people involved in the assessment process are clarified, agreed and documented 2.7 Timelines and time periods for evidence collection are determined and all information to be included in the assessment plan is documented 2.8 The assessment plan is confirmed with relevant personnel	

Element	Description	Document
	3.1 Characteristics of the candidate/s and any allowances for reasonable adjustments and/or specific needs are identified/clarified with relevant people and documented 3.2 Where required, competency standards are contextualised, to reflect the operating environment in which assessment will occur, in accordance with contextualisation guidelines 3.3 Selected assessment methods and assessment tools are examined and adjusted, where required, to ensure continuing applicability taking into account: - any contextualisation of competency standards - reasonable adjustment/s, where identified - integration of assessment activities, where appropriate and practical - capacity to support application for recognition of current competence	

Element	Description	Document
	3.4 Adjusted assessment tools are reviewed to ensure the specifications of the competency standards are still addressed 3.5 The assessment plan is updated, as needed, to reflect ongoing contextualisation needs, any changes in organisational resource requirements or changes in response to the conduct of assessment 3.6 Assessment plan/s are stored and retrieved in accordance with assessment system policies and procedures and legal/organisational/ethical requirements	

Element	Description	Document
	4.1 Identified material and physical resource requirements are arranged in accordance with assessment system policies and procedures and legal/organisational/ethical requirements 4.2 Any specialist support required for assessment is organised and arranged in accordance with organisational/ethical/legal requirements, where required 4.3 Roles and responsibilities of all people involved in the assessment process are organised	

Element	Description	Docume
	4.4 Effective communication strategies are established to encourage regular communication flow and feedback with relevant people involved in the assessment process **4.5 Assessment record keeping and reporting arrangements are confirmed**	

TAAASS402A

Assess competence

Element	Description	Document
	1.1 The assessment plan is interpreted and assessment system policies and procedures and organisational/ legal/ethical requirements for conducting assessment are confirmed with relevant people 1.2 The relevant benchmarks for assessment and nominated assessment tools are accessed and interpreted to confirm the evidence to be collected and how it is to be collected	

Element	Description	Document
	1.3 Details of the assessment plan and the assessment process are explained, discussed and clarified with the candidate including opportunities for assessment, reasonable adjustment, reassessment and appeals **1.4 Proposed changes to the assessment process are negotiated and agreed with the candidate, where relevant**	

Element	Description	Document
	1.3 Details of the assessment plan and the assessment process are explained, discussed and clarified with the candidate including opportunities for assessment, reasonable adjustment, reassessment and appeals 1.4 Proposed changes to the assessment process are negotiated and agreed with the candidate, where relevant	

Element	Description	Document
	2.1 The assessment plan is followed to guide the conduct of assessment and assessment methods and assessment tools are used to gather, organise and document evidence in a format suitable for determining competence 2.2 The principles of assessment and rules of evidence are applied in gathering quality evidence 2.3 Opportunities for evidence gathering in work activities/simulated work activities are determined with the candidate and relevant personnel	

Element	Description	Document
	2.4 Opportunities for integrated assessment activities are identified and assessment tools are modified, where required **2.5 Identified assessment system policies and procedures and organisational/legal/ethical and requirements for assessment are addressed**	

Element	Description	Document
	3.1 Candidates are guided in gathering their own evidence to support recognition of current competence 3.2 Appropriate communication and interpersonal skills are used to develop a professional relationship with the candidate which reflects sensitivity to individual differences and enables two ways feedback 3.3 Decisions on reasonable adjustment/s, where applicable, are made with the candidate, based on candidate's needs and characteristics	

Element	Description	Document
	3.4 Reasonable adjustments must maintain the integrity of the relevant competency standards and provide balanced application of the principles of assessment and rules of evidence 3.5 Specialist support is accessed, where required, in accordance with the assessment plan 3.6 Any occupational health and safety (OHS) risk to person or equipment is addressed immediately	

	Element	Description	Docume
		4.1 Limitations in obtaining and evaluating quality evidence are identified and assistance is sought, where required, from relevant people 4.2 Collected evidence is examined and evaluated to ensure that it reflects the evidence required to demonstrate competency and which: · encompasses all component parts of the competency standards and the dimensions of competency (where competency standards are the benchmarks for assessment) · addresses other related documentation · complies with the rules of evidence	

Element	Description	Document
	4.3 Judgement is used to infer whether competence has been demonstrated, based on the available evidence 4.4 Relevant assessment system policies and procedures and organisational/legal/ethical considerations are addressed in making the assessment decision 4.5 Clear and constructive feedback is provided to the candidate regarding the assessment decision and a follow-up action plan is developed, where required	

Element	Description	Document
	5.1 Assessment outcomes are recorded promptly and accurately in accordance with assessment system policies and procedures and organisational/legal/ethical requirements 5.2 An assessment report is completed and processed in accordance with assessment system policies and procedures and organisational/legal/ethical requirements 5.3 Recommendations for follow up action are submitted to relevant people, where required 5.4 Other relevant parties are informed of the assessment decision where required, and in accordance with confidentiality conventions	

Element	Description	Document
	6.1 The assessment process is reviewed against criteria in consultation with relevant people to improve and modify future assessment practice 6.2 The review is documented and recorded in accordance with relevant assessment system policies and procedures and organisational/ legal/ethical requirements 6.3 Reflection skills are used to review and self-evaluate assessment practice	

TAAASS403A

Develop assessment tools

Element	Description	Document
	1.1 The target group of candidates and the purpose/s and context/s of assessment are identified/clarified 1.2 The relevant benchmarks for assessment are accessed and interpreted to establish the evidence required to demonstrate competent	

Element	Description	Document
	1.3 Where competency standards form the assessment benchmark/s, all component parts of the competency standards are interpreted and, where relevant, these standards are contextualised to meet organisational/legal /ethical requirements, in accordance with contextualisation guidelines 1.4 Other related documentation is identified to inform assessment tool development	

Element	Description	Document
	2.1 Assessment methods are selected which will support the collection of defined evidence, taking into account the context in which the assessment will take place and meeting the principles of assessment 2.2 Nominated assessment methods enable candidates to show or support their claim for recognition of current competency 2.3 Different instruments for the selected assessment methods are considered and options for assessment activities are generated using critical thinking skills	

Element	Description	Document
	3.1 Specific instruments are developed to address the evidence to be collected based on devising assessment activities which: · meet the competency standards · reflect the principles of assessment · incorporate principles of access and equity · meet the rules of evidence · provide choice, where appropriate · are sequenced to reflect competency development in a learning and assessment pathway · are user friendly · reflect the assessment environment · are practicable 3.2 Assessment instruments are developed using appropriate: · style and format · language, literacy and numeracy · sensitivity to audience diversity · visual and aural representation · media	

Element	Description	Document
	3.3 Clear and specific procedures instructing the assessor and/or candidate on the administration and use of the instruments are defined and documented 3.4 Relevant assessment system policy and procedures requirements are considered and addressed including storage and retrieval needs, review and evaluation, version control procedures	

Element	Description	Document
	4.1 Draft assessment tools are checked against evaluation criteria and amended, where necessary 4.2 Draft assessment tools are trialled to validate content and applicability 4.3 Feedback from relevant people involved in trialling is collected and documented 4.4 Amendments to the final tools are made based on analysis of feedback, where required 4.5 Revised assessment tools are appropriately formatted and filed in accordance with assessment system policies and procedures and organisational/legal/ethical requirements	

TAAASS404A

Participate in assessment validation

Element	Description	Document
	1.1 The purpose, focus and context of validation is confirmed and discussed with relevant people 1.2 The approach to validation is discussed and confirmed in accordance with the defined purpose/s, context, relevant assessment system policies and procedures and organisational/ legal/ethical requirements 1.3 Relevant benchmarks for assessment are analysed and the evidence needed to demonstrate that competency is collectively agreed	

Element	Description	Document
	1.4 Any related documentation relevant to validation proceedings is identified and collectively agreed 1.5 Material/s to be used in validation sessions are obtained, read and interpreted and validation activities collectively agreed	

Element	Description	Document
	2.1 Active participation in validation sessions and activities is demonstrated using appropriate communications skills 2.2 Participation in validation sessions and activities, includes the review, comparison and evaluation of: · The overall assessment process · Assessment plans · Interpretation of competency standards or other benchmarks for assessment · Selection and application of assessment methods · Selection and use of assessment tools · The collected evidence · Assessment decisions including the exercise of judgement	

Element	Description	Document
	2.3 The review, comparison and evaluation is undertaken in accordance with the principles of assessment and rules of evidence 2.4 All documents used in the validation process are checked for accuracy and version control	

Element	Description	Document
	3.1 Validation findings are collectively discussed, analysed and agreed to support improvements in the quality of assessment 3.2 Recommendations to improve assessment practice are discussed, agreed and recorded 3.3 Changes to own assessment practice, arising from validation and appropriate to assessment role and responsibilities, are implemented	

PROFESSIONAL LEVEL ASSESSMENT

The Professional Engineer Status who apply a body of knowledge in a specific context to undertake professional work and as a pathway for research and further learning.

Knowledge

- coherent advanced knowledge of the principles and concepts in one or more disciplines and knowledge of research principles and methods

Skills

- cognitive skills to review, analyse, consolidate and synthesise knowledge to identify and provide solutions to complex problems with intellectual independence
- cognitive and technical skills to demonstrate a broad understanding of a body of knowledge and theoretical concepts with advanced understanding in some areas
- cognitive skills to exercise critical thinking and judgement in developing new understanding technical skills to design and use research in a project
- communication skills to present a clear and coherent exposition of knowledge and ideas to a variety of audience

Application of knowledge & Skills

- apply knowledge and skills with initiative and judgement in professional practice and/or scholarship
- adapt knowledge and skills in diverse contexts
- with responsibility and accountability for own learning and practice and in collaboration with others within broad parameters
- plan and execute project work and/or a piece of research and scholarship with some independence

Key Verbs

- research work on system/ modification/ re-engineering/ reverse engineering
- adapt the news systems / alternative system/ more efficient system
- initiate the new technology & application
- consolidate the several functions
- execute the planning & management in engineering works

Types of assessment

- literature review on application/ methods/ system report/ project report
- research paper on new engineering development & systems
- report on project
- creative work on engineering design project
- seminar paper and presentation
- conference paper
- journal article
- viva voce

ASSESSMENT EVALUATION

Actually, evaluation should not wait until the end. You can design your active training program to obtain feedback and evaluation data on an ongoing basis so that you can make adjustments before it is too late.

At the least, you should observe the behavior of the participants.

Do they smile?

Do they seem alert? Involved?

Do they ask questions?

Write a question on a blank flip-chart sheet or a whiteboard, and ask participants to respond to it on the flip chart, on the board, or on blank index cards during breaks.

Here are some possible questions:
316 N Active Training, Third Edition

- **What one word best describes your reaction to today's session?**
- **What will you remember from today?**
- **What was the most important thing you learned today?**

Oral survey. Survey reactions by asking participants to share their feed back on the program out loud.

Ask for volunteers to contribute or go around the group if you want to hear from everyone.

Here is a good set of questions to pose:

- **What would you like more of at our next session?**
- **What would you like less of?**
- **What would you like to continue?**

Informal interview. Casually solicit participant feedback at breaks and at lunch or schedule an evening rap session to discuss participants' feelings about the program in a relaxed manner.

Ask questions such as these:

- **Was the last segment helpful?**
- **Am I relating this material enough to your situation?**
- **Was anything unclear?**
- **Are we ready to move on to new material?**

Advisory group. Meet with a small representative group to obtain reactions. If appropriate, ask group members to interview some participants and report their feedback.

Use questions similar to those in the list.
Most trainers subscribe to the model advanced by that there are four levels of evaluation of a training program:

1. **Reaction:** how participants react to the training
2. **Learning**: the knowledge and skills participants obtain from the training
3. **Behavior:** how the training is applied on the job
4. **Results:** what impact the training has on the organization

Level 1: Reaction

1. Circle the number that best represents your reaction to the program.

a. I feel that I will be able to use what I learned.
(never) 1 2 3 4 5 (often)

b. The program was presented in an interesting manner.
(never) 1 2 3 4 5 (often)

c. The training facilities met my needs.
(never) 1 2 3 4 5 (often)

d. The program covered the promised objectives.
(never) 1 2 3 4 5 (often)

e. The trainer encouraged participation and questions.
(never) 1 2 3 4 5 (often)

2. What did you find most useful in the program?

3. What did you find least useful in the program?

4. Is there anything in this program that could be improved?

Besides testing, you can obtain some evidence that learning has taken place by any of the following:

- Performance on job-relevant tasks at the end of the training program, usually involving in-basket exercises, games, case studies, or role plays

- Participant interviews to see how they would respond to job-related problems

- Project assignments that require participants to integrate what they have learned

Level 2: Learning The simplest approach is to use a questionnaire or interview and ask participants such questions as these:

- What tools, skills, or ideas do you now have that you did not have at the beginning of this program?
- What have you learned that you can put to immediate use?
- What have you already practiced outside of class?
- What intentions or plans do you have as a result of the program?
- What do you want to learn next?

Level 3: Behavior

The easiest way to assess whether your training has led to on-the-job application is to survey or interview participants.

Questions to consider are

- How have you been using the things you learned in the training program?
- Has the training program helped you perform better at work?
- What specific steps can you take to continue or improve the use of the skills and knowledge you learned from the training program?

Level 3 data can also be obtained by any of the following:

- Performance appraisals of participants
- On-site observation of sample participants on the job
- Checklists of key behaviors that are completed by unbiased informants
- Interviewing supervisors

Examples of Level 3 measures, listed by Barksdale and Lund (2004), include:

- Process measures (for example, participants follow a new business process back on the job)
- Productivity measures (for example, participants' errors are reduced)
- Cost measures (for example, participants identify methods to reduce costs)
- Revenue measures (for example, participants increase their referrals to other products)
- Safety measures (for example, participants follow safety procedures)

Bobrow (2005) recommends the following questions to ask of any Level 3 study:

- How many people were in the study? (The more people involved in the study, the more confidence in the results.)
- Was there a control group? (If people not involved in the training program changed as well, the training program may not have been necessary.)
- How large was the performance improvement? (Small changes in behaviour may not warrant the time and expense of the training program.)
- Was the improvement sustained? (Behavior occurring immediately after the training may not be occurring several months later.)

Level 4: Results

Assessing the business results of training is the most difficult to do.

Typically, level 4 evaluation requires time-consuming activities such as focus groups, strategic interviews, and observation.
However, many trainers overlook data that may already exist in the organization.

Here are some examples:

- Employee satisfaction surveys
- Organizational and team morale scores

- Number of customer complaints
- Employee retention; lost time
- Sales revenue
- Cost per sale
- Safety ratings
- Customer service ratings
- Work flow and efficiency data
- Awards from outside sources
- Operating costs
- Compliance versus violations
- Accuracy studies
- Consistency
- Product defects

FINAL THOUGHTS

1. **Focus:** What elements are being evaluated? Data can be gathered concerning any of the following:

- Participants' reactions
- Participants' knowledge, skills, and attitudes
- On-the-job application
- Organizational results

2. Tools: What means are used to collect evaluative data? Any of the following can be utilized:

- Questionnaires
- Observation
- Tests
- Reports
- Interviews

3. Timing: When are data collected? Any of these times are possible:

- Pre-training
- During training
- End of training
- Follow-up period

Finally, it must be said that the evaluation of an active training program is not only about outcome but also about process.

Evaluation efforts should ad-dress what is happening in a training program as much as whether it is making any difference.

Why is process evaluation so important? Quite simply, without good records of what happened during a training program, it is not always clear what needs to be changed if the outcome evaluation is disappointing.

Try to keep a log of the events in the program, how participants responded, and what your own reactions were as well.

Or invite others to watch the proceedings and make observations about the program as it is being experienced.

By doing so, you will be an active participant in your own program.

Page 49 to 76 of

www.highlightcomputer.com/OverallProgramGeneral.pdf

Learning Outcome	Subjects	Time Allocation/ Assessment Method

For Advanced Diploma –AGTI Level, Year 2+3+4 (Professional Diploma) BE/B Tech Assessment Methods

TAEASS502B/ Assessment tools developed

Show the samples

Day 6 Session 3/TAEASS502B/Assessment tools developed/

- UEENEED102A _Student_Assessment_Guide.doc
- UEENEED102A -Assessment - Cover sheet.doc
- UEENEED102A_Asessment_Feedback_Sheet_V3.doc

- Click HERE
- Click HERE

Day 6 Session 3/TAEASS502B/Assessment tools developed/Test Question EE07 & EE011 Combined Class

Online Practical Practice

PRACTICAL ASSESSMENTS

The students need to do the practicals by using the following practical guide

http://www.filefactory.com/file/43r2qqs9vqsb/n/Practical_Guide_pdf

Then they will undergo the following assessment tasks involving Part (A), (B) and (C) in week 8/9 and 16/17 .

Preparation for Assessment Part (A)

- Multiple choices questions test is conducted on general observation of practical equipments.
- The students answer the questions on electronic answer sheets and send them to teacher for assessment.

Assessment--- Correct answers for multiple choice questions are to be assessed.

http://www.filefactory.com/file/1ufyhhdtxvnd/n/Practical_Semester_1_A_pdf

MCQ Practical Practice

M1-MCQ Practical Practice 1

http://www.filefactory.com/file/4mqzaqscw15z/n/MCQ_Practical_Test_Number_M1_Question_pdf

M1-MCQ Practical Practice 2

http://www.filefactory.com/file/3xlxelzcjiwp/n/MCQ_Practical_Test_Number_M2_Question_pdf

Click HERE

Online Theory & Practical Tests

The tests can only live in this blog in Week 8/9 and 16/17

Click the link and enter the access code. Then enter your ID Number in First name & your full name in surname end with your course number

Example--- First name - 34567890, Surname- John Citizen17794

When you finish the test, the result will automatically come out. You print the hardcopy & send the softcopy to kyawnaing325@yahoo.com

The hardcopy is required to be attached with RPL form.

G042-Transmission Lines Test—Semester 2-2012

Question Paper-Click G042 Test Question Paper

http://www.filefactory.com/file/12pcsbpgbkhx/n/G042_Online_Test_1_Question_pdf

Answer sheet- Click G042 Test Answer Sheet

http://www.classroomclipboard.com/503511/Home/Test/047fd1ce1bc44929a6a97aefef738ac9#/InitializeTest.xaml

First Name - TAFE-ID Number

Surname - Your full name

Access Code-- 2WKNN33

G042 Online Test

Ref352

Circuit breaker is

A	To cut off the circuit when fault occurs	B	To cool the arc after disconnecting the circuit
C	To reclose the switch	D	All above
	Answer		

Ref354

Find the input impedance and VSWR of a transmission line 4.3λ long when Zo=100Ω & Z2=200-j150Ω

A	1+j2 Ω, 0.592 λ	B	2-j1.5 Ω, 0.592 λ
C	3+j4 Ω, 1.6 λ	D	3-j4 Ω, 3.6 λ
	Answer		

FREE ONLINE TEST DEVELOPMENT SITES

www.easytestmaker.com

http://www.emailmeform.com

The results of the answers will come out instantly

UNIT EVALUATION

Day 6 Session 3/TAEASS502B/
Evidence of a review process used for your assessment tools/
Units Evalution-Joe+Keng Goh/

- Evaluation Check List EE101A.docx
- UEENEEK041 Unit Evaluation by student.pdf
- Click HERE

Consultation process for contents requirements

Day 6 Session 3/TAEASS502B/
Consultation on the context requirements of candidates/
Diploma in Engineering.docx

Day 6 Session 3/TAEASS502B/
Consultation on the context requirements of candidates/
Engg Associate Stage 1 Compentency Overall Matrix.xls
Click HERE

RECOGNITION OF PRIOR LEARNING (RPL)

- Formal Educational Qualifications
- Previous relevant courses of study
- Work experiences
- Informal learning
- Competency demonstration
- Mutual Recognition
- Continuing Professional Development
- Competency Test

RPL Assessment Template Example

Day 6 Session 3/TAEASS502B/
Example of any recognition pathways developed/
A/Aung,Michael Sann_367383305_17908_RPL_Form_2013.xls

Click HERE

OVERSEAS QUALIFICATONS ASSESSMENT

REASONS

- To promote international co-operation
- To develop mutual recognition
- To protect the profession of national workforce
- To promote & protect the status of professionals
- To look beyond ASEAN Region
- To internationalize the education

EXAMPLES OF INTERNATIONAL ENGINEERING PROFESSIONAL ASSOCIATIONS

www.highlightcomputer.com/perse.htm

Day 6 Session 3/TAEASS502B/
Example of any recognition pathways developed/
Overseas Qualifications Assessment for RPL/

- Assessing overseas qualifications for RPL.docx
- Elect Engg RPL Assessment Procedure for Overseas Qualifications.pdf
- Engineers Australia Professional Engineer.pdf
- Other countries

Continuous Improvement Framework

1. Plan – stakeholders are identified, feedback tools are developed/chosen that suit the stakeholders, responsibilities are allocated for collection of data, a plan for data collection is developed. The plan is then implemented. Data is collected, collated then analysed.
2. Do – data is collected and changes are made as a result of the feedback.
3. Check – changes are monitored and adjusted. Data collected is analysed and compared to the plan.
4. Act – corrective actions are taken to remove deviations from plans (e.g. assessment tools are revised; procedures are changed and introduced to staff).

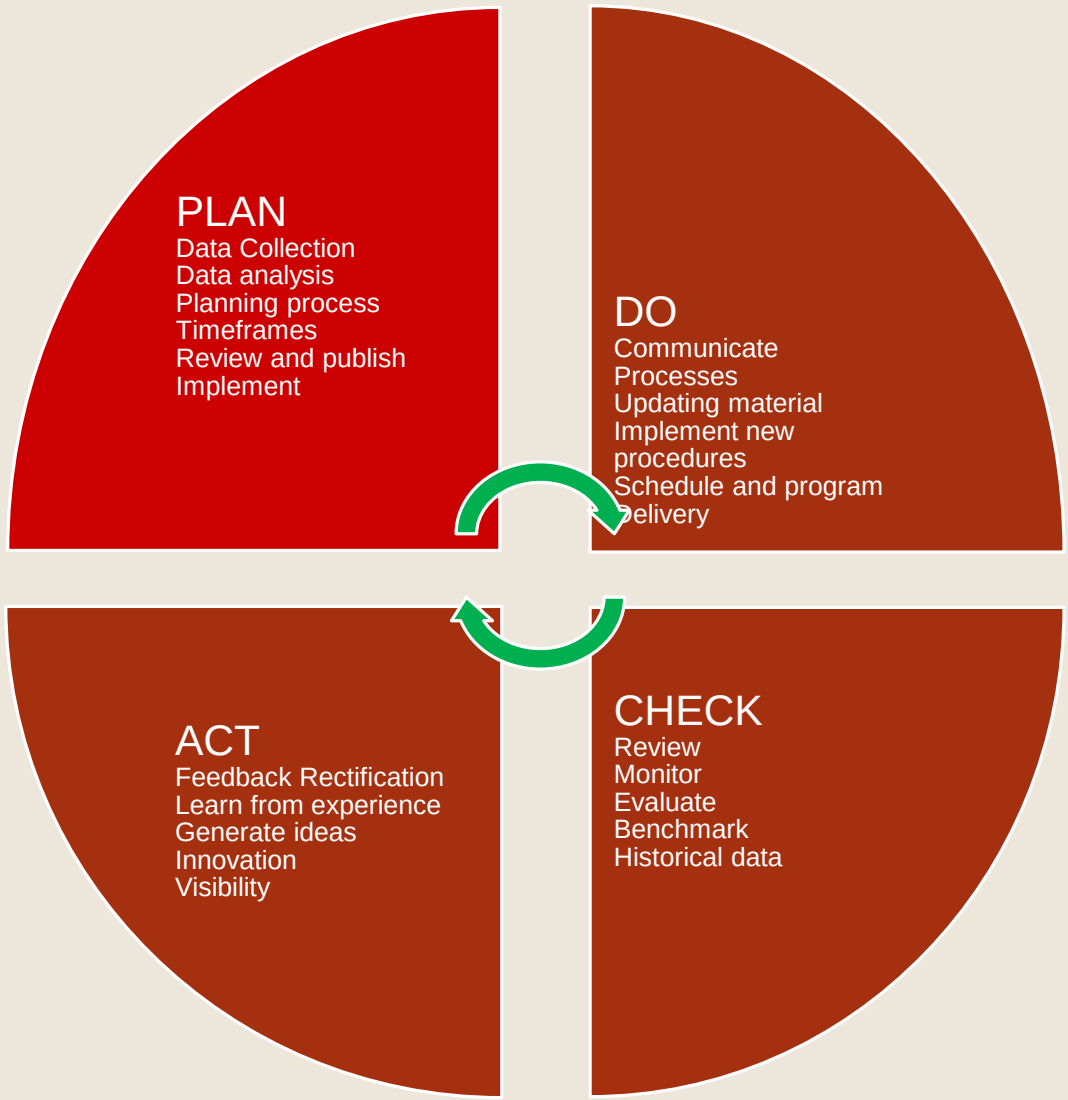
Drivers and data sources

A broad range of data sources can be used for the collection of data and become drivers on which improvement decisions are to be based. These include:

1. Surveys/feedback
2. Audits
3. Complaints and appeals
4. Staff feedback
5. Suggestions
6. Risk Assessment
7. Assessment validation
8. Course evaluations
9. Organisational Self Assessment.

Further the use of the Improvement Request System by all levels of staff is critical to the implementation and recording of improvements within the Institute.

- **PLANNING**
  - Sydney Institute Industry Training Profile
  - Institute Strategic Plan
  - Institute Annual Plan
  - Faculty/College unit Business plans
  - College/Faculty/Teaching Section plans
  - Budget allocation
  - Risk assessment
  - SNR/ISO/other standards
  - Asset planning
  - Marketing Research



- **ACTIONS**
  - Institute Purchasing/Performance Agreement
  - Performance agreements with Senior Managers
  - Workforce development
  - Human resources
  - Student services
  - Student administration and management
  - Facilities management
  - Performance data
  - Policies, procedures, guidelines
  - Audit schedules
  - Training and Assessment

- **ACTIONS**
  - Adjustments following feedback
  - Performance data analysis
  - Performance improvements
  - Generate ideas
  - Innovative solutions/improvements
  - Rectification
  - Root Cause Analysis
  - Strategies to Improve
  - Marketing
  - Trend analysis

- **CHECKS**
  - Performance against plans
  - Performance against Targets
  - Quarterly reporting
  - Continuous mprovement requests
  - Surveys
  - Feedback from all stakeholders
  - Budget performance
  - Focus Groups
  - Self assessment
  - Audits
  - Complaints and appeals
  - Suggestions
  - Assessment validation
  - Course evaluation

PLANNING

Institute Industry Training Profile
Institute Strategic Plan
Institute Annual Plan
Faculty/College unit Business plans
College/Faculty/Teaching Section plans
Budget allocation
Risk assessment
SNR/ISO/other standards
Asset planning
Marketing Research

ACTIONS

- Adjustments following feedback
- Performance data analysis
- Performance improvements
- Generate ideas
- Innovative solutions/improvements
- Rectification
- Root Cause Analysis
- Strategies to Improve
- Marketing
- Trend analysis

ACTIONS (DO)

Institute Purchasing/Performance Agreement
Performance agreements with Senior Managers
Workforce development
Human resources
Student services
Student administration and management
Facilities management
Performance data
Policies, procedures, guidelines
Audit schedules
Training and Assessment

CHECKS

- Performance against plans
- Performance against Targets
- Quarterly reporting
- Continuous mprovement requests
- Surveys
- Feedback from all stakeholders
- Budget performance
- Focus Groups
- Self assessment
- Audits
- Complaints and appeals
- Suggestions
- Assessment validation
- Course evaluation

Purpose and Scope

The purpose of this procedure is to ensure Institute's ongoing process of quality improvement and to define the processes to meet the essential Standards for NVR Registered Training Organisations 2011 and AS/NZS ISO 9001:2008 Quality Management systems

Standards for NVR Registered Training Organisations 2011

- Standard 15.2 states that "*The NVR registered training organisation collects, analyses, and acts on relevant data for continuous improvement of training and assessment.*"
- Standard 16.2 states that *"The NVR registered training organisation continuously improves client services by collecting, analysing and acting on relevant data."*
- Standard 17.2 states that *"The NVR registered training organisation uses a systematic and continuous improvement approach to the management of operations."*

ISO 9001-2008 Standards

- Standard 5.6 Management Review
- Standard 8 Measurement, analysis and improvement

Procedure

Institute’s approach to continuous improvement is guided by the Institute’s Continuous Improvement Framework which outlines the processes to be followed to ensure Sydney Institute practices a systematic approach to continuous improvement of its operations and management.

The approach is based on all activities using the continuous improvement cycle “**Plan–Do–Check–Act**” (**PDCA**).

Institute's Continuous Improvement Framework encompasses all essential facets of its operations including governance, academic services, student services, financial operations, facilities management, human resources and workplace health and safety.

This framework establishes a methodology that is to be applied to all three levels of management

- Teaching Section (Departments)
- College (Government Technical College)
- Institute (Technological University)

Teaching/Operational Section Level

Teacher

- Communicate with students to understand any areas of concern/complaint that may require improvement – academic/non-academic.
- Conduct survey of student satisfaction and other internal survey on issues related to quality monitoring of the section's performance.
- Participate in all activities conducted at the Teaching Section Level as per the SI Continuous Improvement Framework or as directed by the Head Teacher.
- Liaise with fellow colleagues to identify any need for improvement.
- Provide feedback regarding any identified/suggested need for improvement within the institute or its processes.
  - For all general improvements at the section level advise improvement requirements/suggestions to the Head Teacher.
  - For all improvement requirements which may have a broader institute wide impact, use the online Improvement Request System available on SydNet to make an improvement request/suggestion. Refer to Improvement Request Procedure for detailed information.

Head Teacher (Co-ordinator/ Head of Department)

- Manages all Continuous Improvement activities at the Teaching Section Level as per the Continuous Improvement Framework
- Liaise with Teachers regarding any identified improvement requests.
- Liaise with students directly, where needed, for any relevant issues.
- Liaise with Employer/Industry partners
  - for formal Industry Consultation to validate our new/existing courses, training and assessment strategies and all related activities.
  - to seek their feedback on institute's processes and services offered to their trainees/apprentices (where applicable).
- Instruct/action all improvement requirements at the section level. Consults with the AD Sub Faculty/Faculty Director where needed.
- Ensure continuous improvement be a standing agenda item in all internal staff meetings

Faculty AD/Director (Associate Professor/ Professor)

- Monitors and drives changes based on the priorities of the area and severity of the requirements.
- Looks for trends in the improvement needed to evaluate if there are patterns of improvement requirements within the faculty.
- Ensure continuous improvement be a standing agenda item in all internal staff meetings

College/Faculty Level

Student Administration/Customer Service/Other Staff

- Interact with students to understand any areas of concern/complaint that may require improvement.
- Conduct survey of student satisfaction and other internal survey (Institute and Local) on issues related to quality monitoring of college's performance.
- Participate in all activities conducted at the College/Faculty Level as per the Continuous Improvement Framework or as directed by the College/Faculty Management.
- Provide feedback regarding any identified/suggested need for improvement within the College/Faculty or its services.

o For all general improvements at the college level communicate improvement requirements/suggestions with the section manager/ (Chief Administrative Officer).

o For all improvement requirements which may have a broader institute wide impact, use the online Improvement Request System on institute website to make an improvement request/suggestion. Refer to Improvement Request Procedure for detailed information.

College/ Faculty Manager (Assistant Registrar/ Registrar)

- Manage all Continuous Improvement activities at the College/Faculty Level as per Institute Continuous Improvement Framework.
- Liaise with all staff regarding any identified improvement requests.
- Interact with students directly, where needed, for any relevant issues.
- Interact with Employer/Industry partners to seek their feedback on Institute/College processes and services offered to their trainees/apprentices/employees (where applicable).
- Instruct/action all improvement requirements at the college level. Consult with the appropriate Line manager where needed.
- Ensure continuous improvement be a standing agenda item in all internal staff meetings

Institute Level (Technological University Level)

Business Performance Improvement Officer

- Receive all Improvement Requests lodged online by various staff within the Institute.
- Field the requests to the appropriate owners as per the Institute Improvement Request Procedure.
- Consult with the Director, Strategic Planning and Performance for requests requiring their involvement.
- Communicate decisions to the relevant process owner for addressing specific improvement requests.
- Conduct formal surveys on behalf of Sydney Institute to obtain a realistic assessment of the Institute's performance
  - Employer Satisfaction Survey with Employers/Industry partners based on developed Questionnaire.
  - Learner Engagement Survey with students in accordance with the Institute Quality Indicator Learner Engagement Survey Procedure

- Maintain a record of all Survey results.
- Coordinate institute wide Internal/External Auditing processes/activities with relevant Teaching Section/Colleges e.g. Licensing Authorities etc.
- Prepare a Quarterly Report for the Director, Strategic Planning and Performance summarising all Improvement activities conducted across the Institute.

Director, Strategic Planning & Performance

- Responsible for managing all Continuous Improvement activities as per the Continuous Improvement Framework.
- Communicates issues requiring their direct attention/involvement
- Review Continuous Improvement Activities, Surveys (Internal and External) from the Business Performance Improvement Officer.
- Analyse all available data for trends and root causes and uses the information in strategic planning, product development, service delivery changes and in the implementation of process improvement activities across the institute.
- Ensure continuous improvement be a standing agenda item in all internal staff meetings

Institute Executive

- Where applicable, approve/suggest any alternative actions to improvement activities that will impact broadly and may require additional funding.
- Ensure continuous improvement be a standing agenda item in all internal senior staff/executive meetings

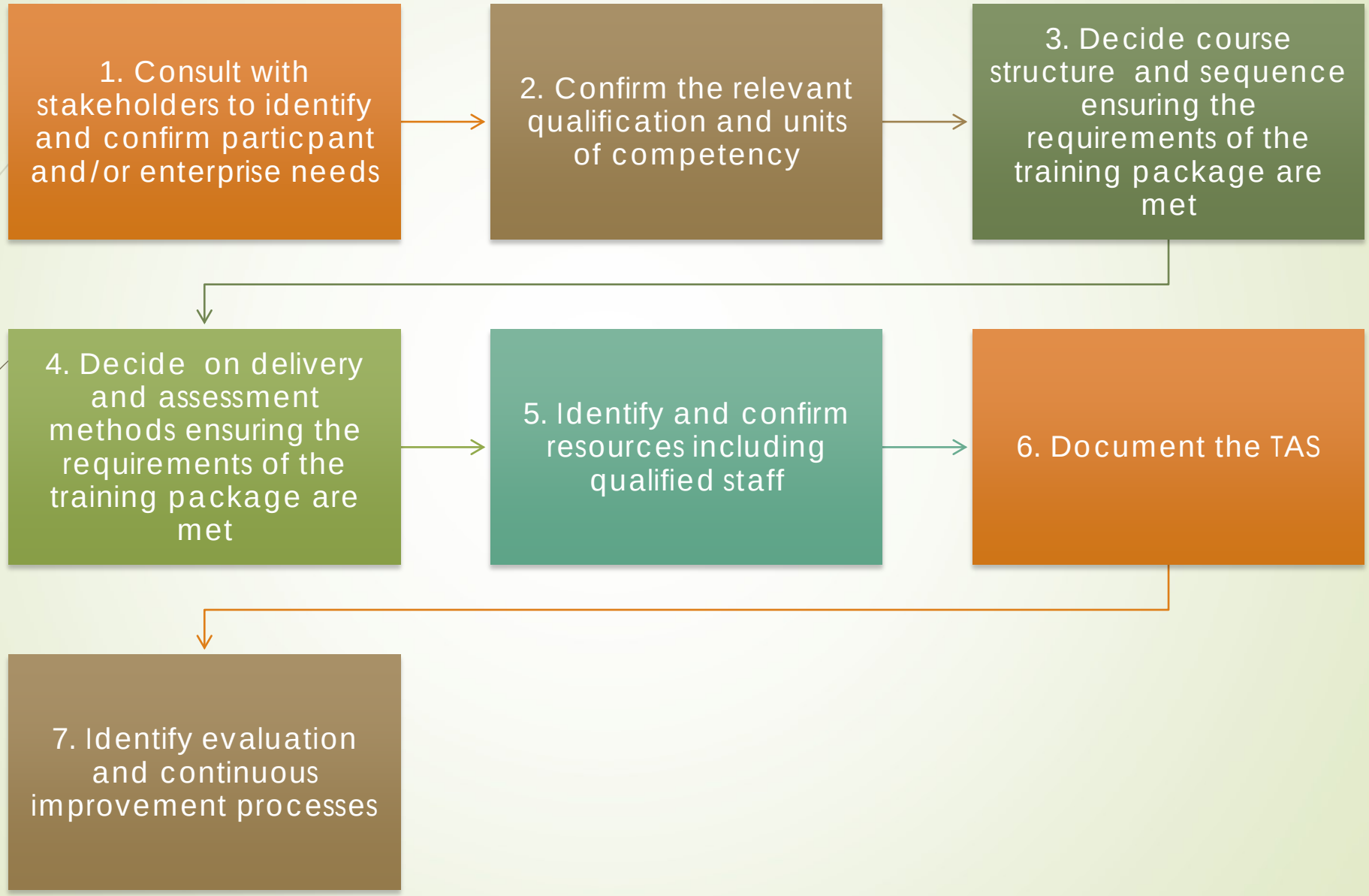
CONTINUOUS IMPROVEMENT – REGISTER

#	34 Date	Improvement request	Requestor	Improvement strategy applied	Responsible	Due date	Outcomes

Comments:	

Manager/Supervisor’s Name:_____Signature _

Developing Training and Assessment Strategies:



1. **Consult with stakeholders to identify and confirm participant and/or enterprise needs**

Who could be consulted?

- Industry organisations
- Unions
- Industry advisory bodies and skills councils
- Past and current business clients
- Licensing bodies
- Community groups
- Workplace documentation such as standard operating procedures
- Part time staff currently working in industry
- Previous, current and potential students
- Existing industry networks
- Employers
- Recruitment Consultants
- Community of Practice/Networks

What information could you gather?

- Changes in industry area/laws/licensing/ regulations/technology
- Future likely changes in the area and trends in industry
- Current equipment and machinery being used
- What the work environment is like
- Workplace resources that could be available for delivery and assessment
- Preferences for delivery and assessment
- Times delivery and assessment could occur on the job
- Structure and sequence preferences
- Characteristics of workers

What documented evidence could you have of this?

- Minutes of meetings
- Emails
- Completed survey forms
- Notes taken at informal discussion with employers
- Presentation notes
- Training plans
- Workplace documents that show standard operating procedures, changes to legislation
- Attendance slip for industry meetings with guest speakers
- Membership and attendance at Industry Associations
- Log of phone calls
- Reports

Target Group:	☐Pre-employment ☐ International Students	☐VET in Schools ☐Existing Workers	☐Apprentices/Trainees ☐Other Please specify, eg, use for broad target group
Details of the Target Group:	For example: Participants in this program are full-time industry trainers and assessors, all with a high level of experience in operational roles within the organisation. All are recruited with high level literacy and numeracy skills, many are university graduates and they also have technical/operational skills in the specific areas in which they will train/assess. They deliver and assess qualifications from AQF level 3 – 5, in a work-based learning and assessment environment. They are expected to develop individuals to work effectively within the organisations self-managed and cross-functional teams, and to apply innovative solutions to training needs to ensure the cost-effective delivery of high quality training and assessment services.		

1. **Decide course structure and sequence ensuring the requirements of the training package are met**

This is where you:

- Consider pre-requisite and co-requisite units
- Decide what units can be clustered for delivery and assessment
- Decide on structure of the program
- Decide sequence of delivery and assessment
- Consider program duration
- Location of delivery and assessment
- Consider any licensing or regulatory requirements which may impact
- Consider support that may be required for students

This is where you would also consider student pathways so in other words what could completing this qualification or skill set or units allow the student to then do.

1. **Decide on core, electives, delivery modes and assessment methods ensuring the requirements of the training package are met**

Identify the core and elective units that will be delivered and assessed. Delivery modes must allow students to meet the requirements of the units and qualification eg. to erect a fence would need to include a delivery component where the students erected a fence. As with the assessment it would include a practical of erecting a fence.

Methods of delivery could include:

- Face to face
- On line
- On the job
- Mixture of on the job and face to face
- Simulated

Assessment can be both formative and summative and can include:

- Role plays
- Question and answer
- Work based activities
- Projects
- Third party reports
- Observation in the workplace and/or classroom
- RPL

Identify and confirm resources including qualified staff

This area covers infrastructure and staffing requirements.

Infrastructure could include;

- Venues
- Learning resources for participant
- Teacher resources
- Assessment resources for student and teacher
- Equipment such as computers; Power point, whiteboards, flip chart
- Access to machinery and equipment relevant to training package requirements such as; forklifts, fully equipped practical equipments and office equipment
- Access to practice opportunities
- Qualified, experienced current trainers and assessors

Document the Training and Assessment Strategy

All your work can be now documented in the Institute template.

As you are completing the template you could find you need to go back through some of the steps.

You could identify a number of documents that you could attach to the completed template such as:

- Staff matrix
- Evidence of consultation
- Assessment plans
- Timetables/program plans- if in course structure and sequence you referred the reader to a timetable. You cannot say the timetable is with the teacher it has to be part of the TAS (Training & Assessment System)

Identify evaluation and continuous improvement processes

This area includes evaluating the program and the TAS to identify future improvements. This is a process which is ongoing and includes:

- Validation
- Evaluation
- Monitoring and review

It’s important to consider what will actually work in reality as you will be required to demonstrate this has been undertaken

EXAMPLE ONLY 46 **Assessment validation/moderation process**	**All assessment methods, materials, tools, evidence used, decision making and processes are validated/moderated in the following ways:** **Planning/Development** **All aspects of assessment are planned, developed and trialled by groups of trainers and assessors working collaboratively together and consulting with stakeholders to ensure shared agreed and consistent approaches.** **Implementation** **Various validation strategies ensure consistency between assessors during assessment, including the use of standard processes, materials and tools; assessment panels; direct supervision of new assessors; and access to a lead assessor for questions/decisions.** **Evaluation/Follow Up** **Feedback is gathered from all stakeholders in the assessment process including candidates, managers and supervisors and assessors. Assessment evidence gathered is reviewed and assessment decisions moderated. Assessment processes, methods, materials, tools and decision-making are revised in light of evaluation results.** **Detailed evidence of validation is available.**

EXAMPLE ONLY **Monitoring and evaluation**	**Includes ongoing feedback with client and students.** • **Feedback from all stakeholders including trainers, assessors, participants, candidates, managers and supervisors of participants, both during and following delivery and assessment. Feedback will be sought formally and informally to become a component of the data collection.** • • **Student results will be used as a measure for the success of the program. Ongoing feedback will be sought while implementing the TAS in order to gather data for future programs.** • **Detailed evidence of monitoring and evaluation is available.**

SYDNEY INSTITUTE TAFE

INDUSTRY CONSULTATION SUMMARY

Section: _____

Date of Consultation	Type of contact: email, meeting etc	Name of Staff Member	Industry Contact		Qualification Consultation Relates to	Topic of discussion Industry Consultation	Outcome/s of Industry Consultation
			Name	Organisation			
Example 1/07/2011	*Meeting*	*Adam Smith*	*Mari Knox*	*PXL Systems*	*Diploma of Business Administration*	*Discussed elective units for part time class*	Suggested substitution of elective unit, BSBWOR501B Manage Personal Work Priorities and Professional Development replaced by BSBFIM401A Manage Budgets and Financial Plans

SYDNEY INSTITUTE
TAFE NSW

Industry Consultation Record - Training and Assessment

This checklist and action plan is to be used as a guide when consulting with industry.

Industry may include enterprises, industry skill councils, industry associations, group training organisations and staff employed by Sydney Institute that have relevant competencies through current external employment in industry.

Faculty:	**Section name:**
Sub-faculty:	
Qualification name and number:	**Course No:**
Training package name and number:	
Unit name and number:	

	Yes/No or N/A	Comment and Action Plan Include Action, By Whom, By When
1. Do the training and assessment strategies and assessment tasks reflect industry standards and regulations?	☐	
2. Do the training and assessment strategies and tasks reflect current industry practice?	☐	
3. Is the proposed learning sequence and delivery method suitable for personnel within your workplace or industry?	☐	
4. Do units of competency incorporated in training and assessment strategy reflect skills and knowledge required in your workplace or industry?	☐	
5. What [illegible]		

Faculty:	**Section name:**
Sub-faculty:	
Qualification name and number:	**Course No:**
Training package name and number:	
Unit name and number:	

	Yes/No or N/A	Comment and Action Plan Include Action, By Whom, By When
1. Do the training and assessment strategies and assessment tasks reflect industry standards and regulations?	☐	
2. Do the training and assessment strategies and tasks reflect current industry practice?	☐	
3. Is the proposed learning sequence and delivery method suitable for personnel within your workplace or industry?	☐	
4. Do units of competency incorporated in training and assessment strategy reflect skills and knowledge required in your workplace or industry?	☐	
5. What emerging industry trends may need to be considered for the design of future assessments and training?	☐	

Comments:

Industry Representative Name:	**Position:**	**Organisation Name**	
Industry Representative Name:	**Position:**	**Organisation Name**	
Sydney Institute Representative Name:	**Position**	**Signature**	**Date**

Teacher Qualification Matrix

NOTE:
*To go to **Unit of Competency** page,*
click on the UoC Matrix tab below:

Teacher's name: _____

Section: _____ **Date completed/amended:** _____

Sub-Faculty _____

Industry Qualification (e.g. Technical /Vocational/Degree)	Year Attained	Licensing Requirement (e.g. Lic name, Issuing authority, date, number)	Year Attained	Teaching Qualifications (i.e.Cert IV in T&A: TAE10/ TAA04/ BSZ98)	Year Attained	Currency (recent and relevant industry and teaching experience - include dates)	Under Direct Supervision	Sighted by Head Teacher (initials)
(Example: Cert IV in Hairdressing)	(Enter year industry qualification attained)	*(Example: Plumbing Contractor Licence #: 210237C - OFT, 2008)*	(Enter year license attained)	*(Examples: TAE40110 Cert IV Training & Assessment)*	(Enter year teaching qualification attained)	*(Example: Bridge and Road Maintenance work with City Council 1998 - present)*	(Evidence will be requred, where a staff member is under direct supervision)	*(Example: Initials only if sighted **ALL** qualifications)*

NOTE:
To go to ***Teacher Qualification*** *page, click on* ***Teacher Quals*** *tab below:*

UNIT OF COMPETENCE FORM (Head Teacher to complete)

Head Teacher Name: ______________________

Section: ______________________ **Date:** ______________

KEY:

C = Competent to deliver and assess

S = Under supervision

Co = Co assessment *(two assessesors may work together to assess - one with vocational units of competence and the other with assessor competencies)*

Unit of Competency (TGA Code)	Level of Qualification	Teacher Name (1)	Teacher Name (2)	Teacher Name (3)	Teacher Name (4)	Teacher Name (5)	Teacher Name (6)	Teacher Name (7)	Teacher Name (8)	Teacher Name (9)	Teacher Name (10)	Teacher Name (11)	Teacher Name (12)	Teacher Name (13)	Teacher Name (14)	Teacher Name (15)	Teacher Name (16)

CURRENCY CHECKLIST

Teacher's name:	
Section;	
Sub-faculty:	

Example	✓ Industry	✓ VET knowledge and skills	✓ Trainer and Assessor	Details (Insert information about when where and how currency has been maintained)
Work-based Delivery and or Assessment				
Attend/organise sessions where guest speakers from industry for students				
Attend professional development opportunity where guest speaker from industry present				
Attend conference				

Day 6 Session 3/ Audittools/How_to_Guide_for_Developing_Training_and_Assessment_Strategies_V10_1012.docx

- **Page 17 to 20**
- **Click HERE**

Industry Consultation

The **purpose** of consulting with industry is to ensure that our delivery and assessment strategies, resources and methods reflect industry needs.

Industry Consultation should be conducted at various stages for a variety of purposes:

- at course development stage
- addition to the Institute's scope of registration
- development of individual training and assessment strategies for the approved courses
- during re-registration of the course on the institute's scope
- program delivery and assessment
- ongoing validation of the effectiveness of the program.

Industry Consultation

Procedure

- Industry Consultation requires a careful analysis of our needs and should be conducted in the following planned stages
- Identify the consultation needs
- Identify the appropriate Industry to be consulted
- Identify the methods and tools to consult
- Identify the methods to record industry consultation

Industry Consultation

Identify the consultation needs

- Identify the type of consultation you may require from a specific industry or its representatives – for a specific course or some units of competency. It may be seeking feedback from your industry in terms of current work practices, equipment, standard of performance and similar issues so that you can incorporate that information into your planning.

The information gathered will assist in many ways such as

- course packaging i.e. selection of appropriate electives for each cohort
- establishing a logical sequence for delivery of units
- identify appropriate attendance patterns
- develop appropriate learning resources
- update assessment tools, methods and criteria
- define the process of training planning, delivery and assessment

Industry Consultation

Identify the Industry

- Industry may include enterprises, group training organisations, industry skill councils, industry associations, authorities involved in licensing relating to your qualification(s) e.g. Office of Fair Trading, WorkCover and staff employed by Sydney Institute that have relevant competencies through current external employment in industry. In most cases it could be a collection of organisations that will employ your students.

Industry Consultation

Identify the methods and tools to consult

Industry consultation may be conducted in many ways but must always be focused on the identified needs such as:

- consultation may be conducted through attendance at a workshop, seminar, exhibition, reading a product/industry publication, internet research, written feedback, formal and informal meetings, electronically or in some cases over the phone. Some examples are
  - targeting a particular manufacturer to find out what new products are on the market, how they work and how they add value to a practitioner.
  - consultation with an existing trainee / apprentice, their employers or a part time teacher may give us some new insight into current work practices
- appropriate tools must be available for conducting the consultation. Refer to the Industry Consultation letter and questionnaire included in this document.

Industry Consultation

Identify the methods to record industry consultation

These documents provide guidance and template for you to use when consulting with industry.

Record

- Use the Industry Consultation Record (General) when consulting with Industry.
- The Industry Consultation Record (Apprentice/Trainee) is used as a guide when consulting with industry representatives in relation to apprentices and trainees.

Guidelines and information

- The Industry consultation - General (guidelines, letter and questionnaire) is used to welcome an industry representative to participate in a review of Sydney Institute's effectiveness in delivering training to employees within their organisation.
- The Industry consultation - Apprentice/Trainee (guidelines, letter and questionnaire is used to welcome an industry representative to participate in a review of Sydney Institute's effectiveness in delivering training to apprentices and trainees within their organisation.

Summarise

- The Summary of Industry Consultation Form is used to summarise the consultation processes with industry.

Training & Assessment Strategy [TAS]

Developing a Training and Assessment Strategy

- A TAS is an overarching plan which is unique to the course & cohort of students

- A TAS must be developed for each distinct group of learners based on industry consultation and the group's demographics and needs

- Documents that need to be attached to the TAS:
  - Staff matrix
  - Evidence of consultation
  - Assessment plans
  - Program plans
  - Timetables – if in the TAS you refer the reader to a timetable it must be included with the TAS

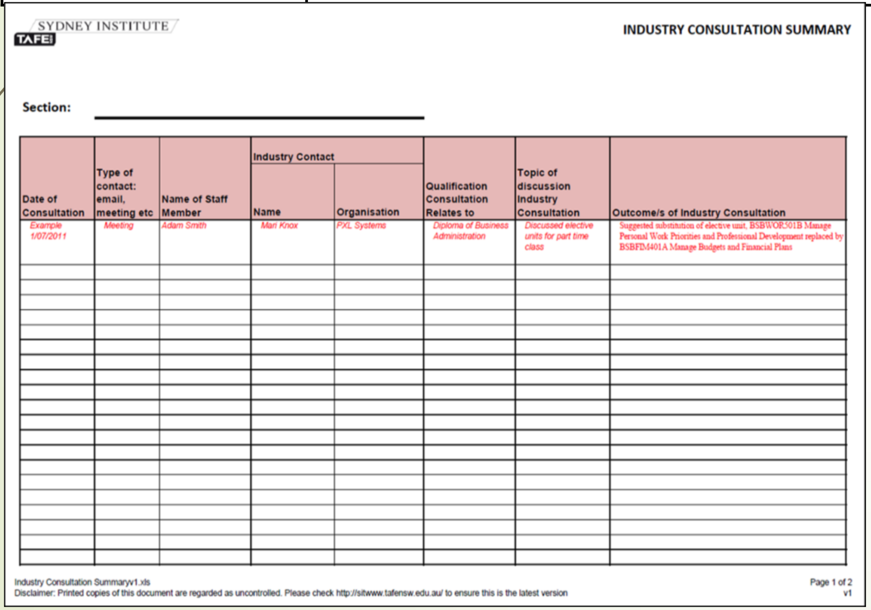
- Review the TAS annually

Training & Assessment Strategy [TAS]

TAS VERSION NO		DATE		TAS VERSION NO	
College		Faculty		TRIM File No (if applicable)	
Head teacher		Contact No		Head teacher	
Training Package Code & title		From www.training.gov.au			
Code & title of qualification		From www.training.gov.au			
Target group (please tick)		☐Pre-employment ☐ VET in Schools ☐ Apprentices/Trainees ☐ International Students ☐ Existing Workers ☐ Other (Please specify)			
Details of target group	• Choose only one cohort per TAS • Who are they? Give an overview of the group this TAS is addressing- this may adjust depending on what the teacher finds when the group commences. • If this cohort is the same for several Colleges – list colleges eg: hairdressing apprentices • What defines them as a group – age, background, interest • Are they 18 to 21 year olds, employers in small business, chefs or Indigenous Australians? • Why are they training?				

Training & Assessment Strategy [TAS]

Consultation	Attach or Link **Summary of Industry Consultation Form** and **Industry Consultation Record -Training and Assessment (General)** and/or **Industry consultation record - Training and Assessment (Apprentice/Trainee)**



SYDNEY INSTITUTE TAFE

INDUSTRY CONSULTATION SUMMARY

Section: ____________

Date of Consultation	Type of contact: email, meeting etc	Name of Staff Member	Industry Contact		Qualification Consultation Relates to	Topic of discussion Industry Consultation	Outcome/s of Industry Consultation
			Name	Organisation			
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Industry Consultation Summaryv1.xls — Page 1 of 2

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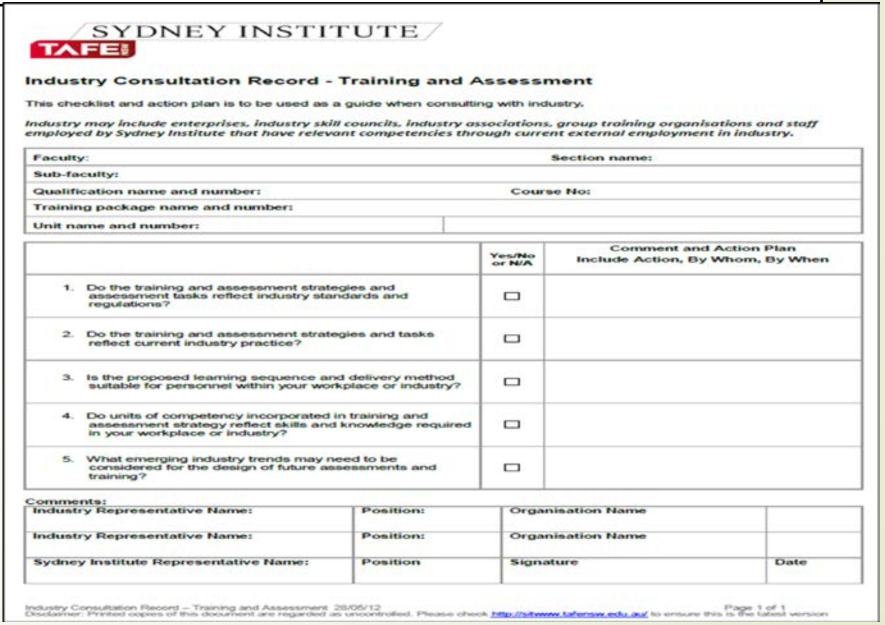

SYDNEY INSTITUTE TAFE

Industry Consultation Record - Training and Assessment

This checklist and action plan is to be used as a guide when consulting with industry.

Industry may include enterprises, industry skill councils, industry associations, group training organisations and staff employed by Sydney Institute that have relevant competencies through current external employment in industry.

Faculty:	Section name:
Sub-faculty:	
Qualification name and number:	Course No:
Training package name and number:	
Unit name and number:	

	Yes/No or N/A	Comment and Action Plan Include Action, By Whom, By When
1. Do the training and assessment strategies and assessment tasks reflect industry standards and regulations?	☐	
2. Do the training and assessment strategies and tasks reflect current industry practice?	☐	
3. Is the proposed learning sequence and delivery method suitable for personnel within your workplace or industry?	☐	
4. Do units of competency incorporated in training and assessment strategy reflect skills and knowledge required in your workplace or industry?	☐	
5. What emerging industry trends may need to be considered for the design of future assessments and training?	☐	

Comments:

Industry Representative Name:	Position:	Organisation Name	
Industry Representative Name:	Position:	Organisation Name	
Sydney Institute Representative Name:	Position	Signature	Date

Industry Consultation Record – Training and Assessment 28/05/12 — Page 1 of 1

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Training & Assessment Strategy [TAS]

Packaging rules	• Go to www.training.gov.au to ensure the latest version of the training package is being used. • Use the template to identify the core and elective units that will be delivered and assessed within the TAS do not list every unit available within the qualification. • This is where all the information gathered during consultation assists in determining the qualification and units; in particular checking the AQF level and the elective units. Your consultation should have provided enough information to identify units that are suitable to ensure the consultation outcomes are met.

Training & Assessment Strategy [TAS]

Co requisites	You will need to check the training package to ensure you have met any co-requisite units.
Pre requisites	You will need to check the training package to ensure you have met any pre requisite requirements.
Entry requirements	You will need to check the training package to ensure you have met any entry requirements.
Licensing Regulatory requirements	Consider any licensing or regulatory requirements which are essential for the particular qualification, particularly in reference to unit requirements. You will need to check the ASQA External licensing & additional registration requirements spread sheet to ensure you have met any external licensing & additional registration requirements.
Student support	Consider support that may be required for students. Go to Student services and facilities

Training & Assessment Strategy [TAS]

Pathways	This is where you would suggest any further study pathways student could access upon completing this qualification or skill set or units. List the pathways from www.training.gov.au and indicate whether SI offers these pathways.
Program duration	This is where you indicate the number of years, semesters or weeks of delivery and how many hours (actual) per week.
Delivery arrangements including location	Specific information about the delivery and location of the qualification including any arrangements you may have with external organisations / companies / industry workshops / labs where students would be trained if applicable. Information should be identical to the timetable, can be linked here.
Assessment arrangements including RPL	Specific information about the assessment and any arrangements that you may have made with External Subject Specialists / Industry representatives who would come in to the Institute to assess the students on specific skill sets relevant to their expertise. It also applies to the arrangements your faculty may have with Employers in case of students / group being trained / assessed at their respective work place. All methods of gathering evidence must be described here. The information provided

Training & Assessment Strategy [TAS]

Delivery and Assessment Schedule			
Units of Competency – core and electives List all core and elective units of competency that will be offered for this qualification here as per the training package rules.			
Key for delivery modes Define the appropriate modes of delivery for this course and group which meets the essential requirements of the UOC and the Qualification.			
1. on the job	2. simulated	3. blended	4. self paced
5. distance	6. online	7. face to face	8. other, please specify

Training & Assessment Strategy [TAS]

Delivery and Assessment Schedule			
Key for methods of gathering evidence You will need to check the training package to ensure you have met specific assessment requirements of the UOC eg: The unit requirements for SITHCCC027A Prepare, cook and serve food for food service states *collection of direct, indirect and supplementary evidence showing preparation and service of multiple items for a minimum of 12 complete food service periods to ensure integration of skills and consistency of performance in different circumstances*			
1. assignment	2. written task	3. role play	4. oral questioning
5. project	6. training record book	7. portfolio	8. observation
9. Practical demonstration	10. third party report	11. other, please specify	

Training & Assessment Strategy [TAS]

If insufficient space, please attach a list, using the same format. *A class timetable is not sufficient unless it contains the same information as identified here.*

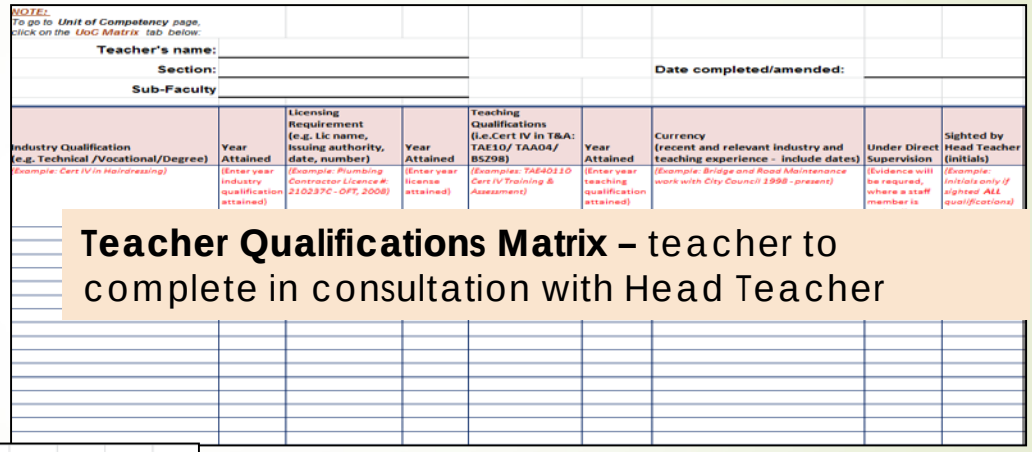
Weeks	Hours	Unit no	Unit name	Core or Elective	Delivery mode/s	Assessment methods
1-5	20	xxxx	xxxxxxx	C	6	5, 1, 2

Training & Assessment Strategy [TAS]

Infrastructure requirements	Staff and participants have access to: Infrastructure could include: •Venues •Learning resources for participant •Teacher resources •Assessment resources for student and teacher •Equipment such as computers; Power point, whiteboards, flip chart •Access to machinery and equipment relevant to training package requirements such as; forklifts, fully equipped kitchens and office equipment •Access to practice opportunities Infrastructure does not necessarily need to be owned by the RTO to be used in delivery and assessment. *If they are leased then they need to be reflected in the Delivery Arrangement section and an appropriate Contract must be kept on file for presenting to the Auditors when asked.*

Training & Assessment Strategy [TAS]

Delivery and assessment staff	Attach or link **Teacher Qualifications Matrix** Please refer to **Currency - Guide for maintaining and demonstrating currency for trainers and assessors**

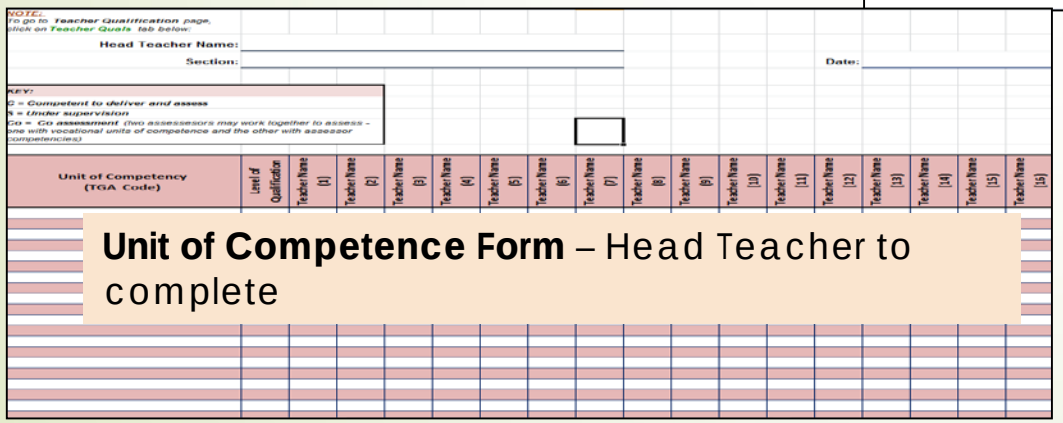


NOTE:
To go to *Unit of Competency* page, click on the *UoC Matrix* tab below:

Teacher's name:
Section:
Sub-Faculty
Date completed/amended:

Industry Qualification (e.g. Technical /Vocational/Degree)	Year Attained	Licensing Requirement (e.g. Lic name, Issuing authority, date, number)	Year Attained	Teaching Qualifications (i.e.Cert IV in T&A: TAE10/ TAA04/ BSZ98)	Year Attained	Currency (recent and relevant industry and teaching experience - include dates)	Under Direct Supervision	Sighted by Head Teacher (initials)
(Example: Cert IV in Hairdressing)	*(Enter year industry qualification attained)*	*(Example: Plumbing Contractor Licence #: 210237C - OFT, 2008)*	*(Enter year license attained)*	*(Examples: TAE40110 Cert IV Training & Assessment)*	*(Enter year teaching qualification attained)*	*(Example: Bridge and Road Maintenance work with City Council 1998 - present)*	*(Evidence will be required, where a staff member is*	*(Example: Initials only if sighted ALL qualifications)*

Teacher Qualifications Matrix – teacher to complete in consultation with Head Teacher



NOTE:
To go to *Teacher Qualification* page, click on *Teacher Quals* tab below:

Head Teacher Name:
Section:
Date:

KEY:
C = Competent to deliver and assess
S = Under supervision
Co = Co assessment (two assessors may work together to assess - one with vocational units of competence and the other with assessor competencies)

Unit of Competency (TGA Code)	Level of Qualification	Teacher Name (1)	Teacher Name (2)	Teacher Name (3)	Teacher Name (4)	Teacher Name (5)	Teacher Name (6)	Teacher Name (7)	Teacher Name (8)	Teacher Name (9)	Teacher Name (10)	Teacher Name (11)	Teacher Name (12)	Teacher Name (13)	Teacher Name (14)	Teacher Name (15)	Teacher Name (16)

Unit of Competence Form – Head Teacher to complete

Training & Assessment Strategy [TAS]

Assessment validation **moderation process**	All assessment methods, materials, tools, evidence used, decision making and processes are validated /moderated in accordance with Sydney Institute **Assessment Validation Procedure** **Assessment Validation Risk Matrix** **Assessment Validation Plan - Faculty** **Assessment Validation Plan - Section**

- All aspects of assessment are planned, developed and validated by groups of trainers and assessors working collaboratively together and consulting with stakeholders to ensure shared, agreed and consistent approaches.

- Assessment evidence gathered is reviewed and assessment decisions moderated. Assessment processes, methods, materials, tools and decision-making are revised in light of evaluation results. Detailed evidence of validation is available at location A.

Training & Assessment Strategy [TAS]

Monitoring and Evaluation	You are required to monitor, record and evaluate all practices for continuous improvement. Evidence must be available to demonstrate compliance.
	For Example: •Includes ongoing feedback with client and students •Feedback from all stakeholders including trainers, assessors, participants, candidates, managers and supervisors of participants, employers, industry, both during and following delivery and assessment. Feedback will be sought formally and informally to become a component of the data collection. •Detailed evidence of monitoring and evaluation is available at location A.

TAS documents in PaCK

- TAS Training and Assessment Strategy - Procedure - This procedure provides guidance for planning and participating in the development of the Training and Assessment Strategy
- TAS Developing Training and Assessment Strategies - How To Guide — a guide to the process of developing or using Training and Assessment Strategies (TAS).
- TAS Training and Assessment - Faculty teamshares guidelines - This document is provided as a guideline for employees responsible for populating the dedicated teamshare / network share folders
- TAS - Training and Assessment Strategy - Exemplar (NEW) — This is used as a reference while completing a Training & Assessment Strategy for any qualification.
- TAS Training and Assessment Strategy Template — a template for developing a Training and Assessment Strategy (TAS) - Please consult the How to guide for specific step-by-step requirements for developing TAS.

Scope of Registration

Faculty Designated Head Teacher (Scope Requestor)

- If you do not have access to the eScope system, complete the EATR Access Request Form, which go to Strategic Planning & Performance
- Enter the Scope request on the eScope system and email the TAS and supporting evidence to the Faculty Assistant Director.
- Use the Variation to Scope Checklist to ensure that you have completed all the evidence requirements
- Scope of Registration in NSW pertains only to **Category 1** courses.

Pathway

- Faculty HT → Faculty AD → Faculty Director
- Faculty HT → College AD → Faculty AD

Scope of Registration

Variation of Scope of Registration Checklist		
Evidence Requirements	**YES**	**NO**
Training and Assessment Strategy (TAS) completed as per Developing Training and Assessment Strategies - How to Guide		
Assessments (General) - A complete set of validated assessment tools, including student instructions and assessor guides, to gather evidence and conduct assessment of all knowledge and skill requirements of one (1)unit of competency (per qualification, course, skill set or unit) [Ref: SNR 15.3 & 15.5] have been developed.		
Assessments (qualifications and units of competency from the TAE10 Training and Assessment Training Package) – require assessment processes, plans and tools which will be used to assess a minimum of two units of competency (if seeking more two or more) from each TAE10 qualification sought in the application have been developed and validated		

Scope of Registration

continued

Variation of Scope of Registration Checklist		
Evidence Requirements	**YES**	**NO**
Teacher Qualifications and Unit of Competence Matrix constructed which reveals responsibility for delivery and assessment and vocational and teaching qualifications (which comply with Standards for NVR Registered Training Organisations 2012) have been completed.		
Industry Consultation Summary and/or Record - Records of effective consultation with relevant industry/enterprise/ regulatory body/community regarding the relevant training and assessment strategies for the qualification/course have been completed.		
Has reference to **ASQA – External Licensing and additional registration requirements** been made to determine any additional registration application requirements for the qualification, skill set or UoC, in particular State or Territory when varying scope of registration		
Permission from accredited course owners has been provided (if required)		

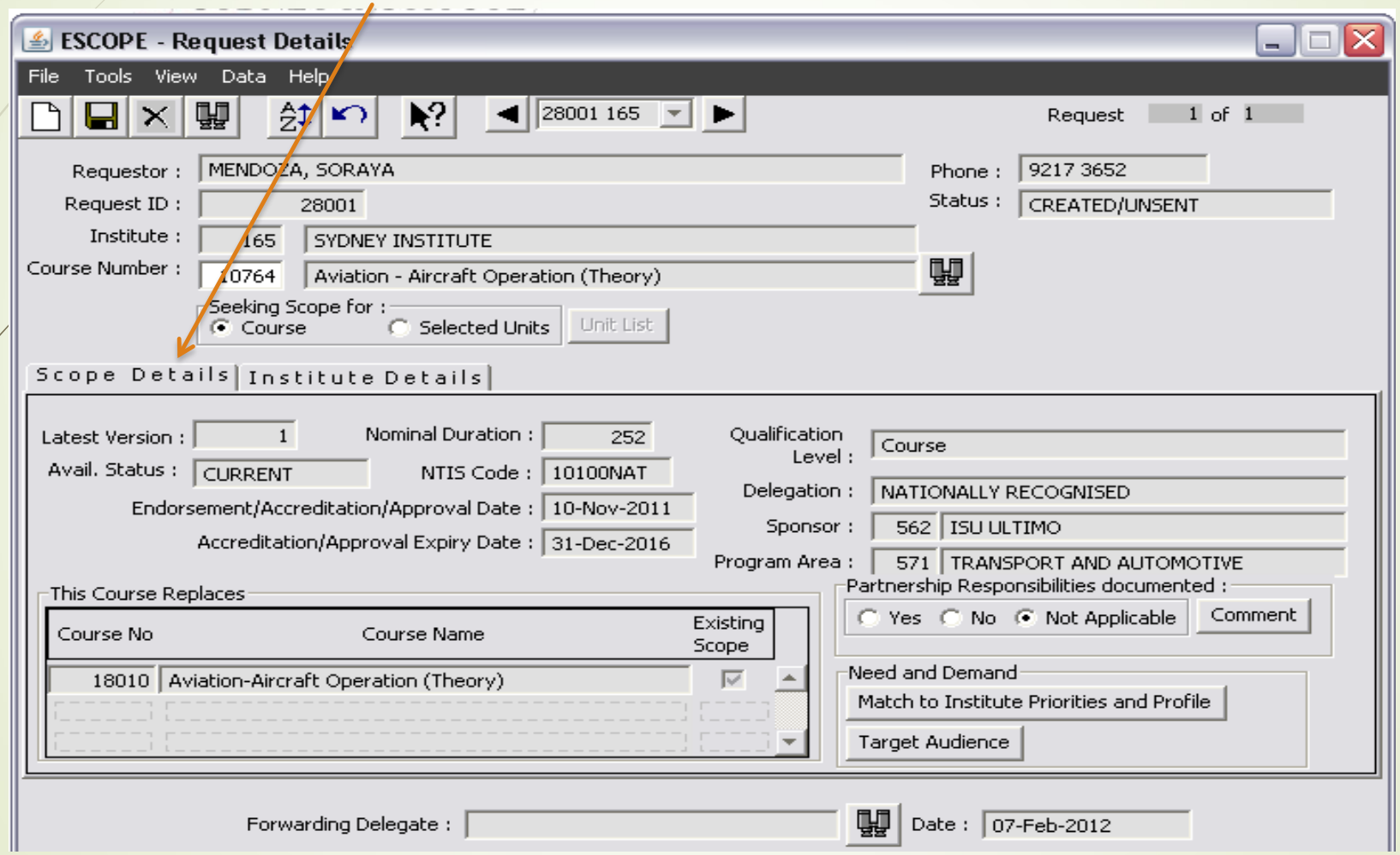
Scope of Registration

continued

Variation of Scope of Registration Checklist		
Evidence Requirements	**YES**	**NO**
If delivering/assessing in another state or offshore, the application must be accompanied by the following form and sent to Forwarding Delegate within 21 days of advertising and/or delivery: **Deliver/cease nationally recognised training interested and off-shore - TAFE NSW**		
The following documents have been saved according to file naming conventions outlined in the TAS Procedure and submitted with your scope application: Training and Assessment Strategy Summary/Record Teacher Qualifications and Unit assessment Matrixtools for one UoC. Industry Consultation A complete set of validated of Competence		

Scope of Registration – eScope system

Scope details tab



Partnership Responsibilities Documented: Select one

☑ Yes ☐ No ☐ Not Applicable

PARTNERSHIP RESPONSIBILITIES:

Enter a comment regarding the partnership and indicate what type of partnership & where the documentation is kept, if you selected "Yes" above

SAMPLE

Partnerships have been developed in order to provide access to on the job manufacturing delivery. A partnership agreement is located at each teaching section team shares that is delivering this qualification. For development of this qualification the agreement is the following location The agreements indicates amongst other things, responsibilities of each party and resources that are available at this location and is stored in **location A.**

Match to Institute Priorities and Profile

Comment how the course/qualification meets the SI Faculty Profile & SI Annual Plan. Some reference should be made to how the application meets one, or more of the following: Our Customers, Our Partners, Our Business, Our Teams and Our World

SAMPLE

This qualification was developed to assist Sydney institute meet its vision: of **"**Training and education to create futures and change lives" in addition to meeting its target in the Annual Plan 2013

of Enrolments in skill priority areas by increasing pathways into these skills priority areas of which Engineering is one.

Scope of Registration

TARGET AUDIENCE:

The target audiences at the scope level is a summary of the target groups for the qualification by College in Institute. This information can be a summary of information from your TAS documents.

SAMPLE

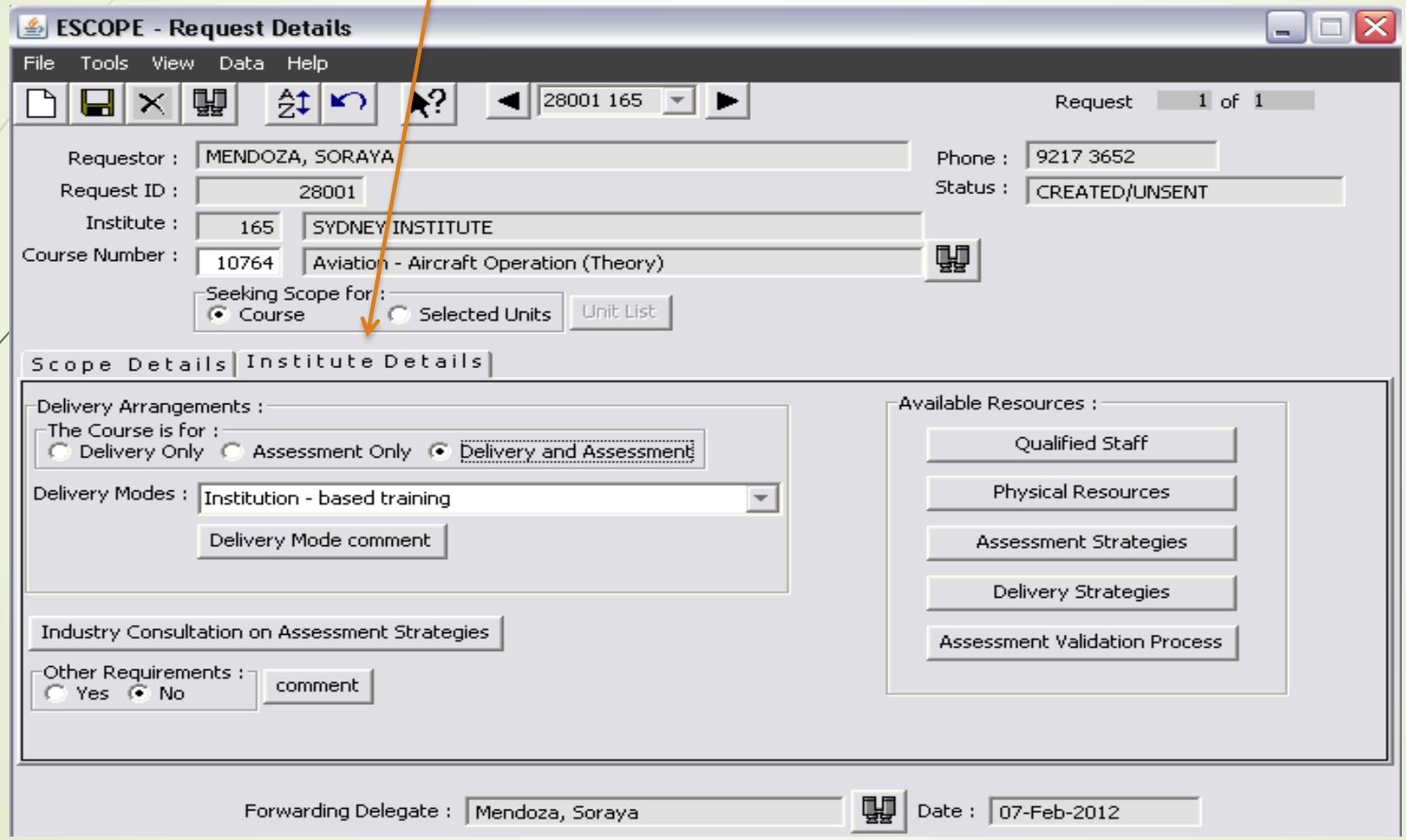
The Certificate I Engineering qualifications will be used predominantly by people seeking to enter or just entering the workforce. This qualification is part of the Metals and Engineering Training Package. It is for people entering employment in the manufacturing, engineering and related industry areas. Students in Years 10, 11 and 12 may enrol in this course.

The main target groups are:

1. Pre-employment
2. VET in Schools

Scope of Registration – eScope system

Institute details tab



INDUSTRY DETAILS TAB

FORWARDING DELEGATE:

Enter the appropriate Faculty Assistant Director

- **Faculty AD – Tourism & Hospitality**
- **Faculty AD – Service Industries**

INDUSTRY DETAILS

DELIVERY ARRANGEMENTS:

The Course is for: **Select one** ☐ Delivery Only ☐ Assessment Only ☑ Delivery and Assessment

DELIVERY MODE: It is recommended to select blended as the course may be offered in a variety of modes across the Institute or could be in the future.

DELIVERY MODE COMMENT:

Specific details of the delivery modes are included in the Training and Assessment Strategy [TAS] however a brief comment is appropriate here. The target groups could be listed with their delivery mode.

SAMPLE

This course will be offered as blended delivery and may be a combination of on the job, simulated and face to face. Details are provided in the TAS.

Scope of Registration

AVAILABLE RESOURCES:

QUALIFIED STAFF: Teacher qualifications and currency should be addressed here.

If the Training Package requires trainers to have specific qualifications e.g. licences this should also be noted here.

SAMPLE

All teachers hold the relevant competencies that are required to deliver/assess in this qualification, as well as Cert IV in Training and Assessment or equivalent (or operate under a Supervised Teacher agreement) in line with Training Package requirements and the requirements of the SNR and National Skills Standards Council (NSSC) determination. A teacher skills matrix is held in all teaching section team shares where this qualification is delivered. For the development of this Scope the Teacher skills matrix is located in **location A.**

PHYSICAL RESOURCES:

Aligns with the requirements of the Training Package/accredited course. List any specialised equipment that may be required for delivery from the Training package or accredited course. Include details on where Materials/equipment registers are kept. For on-the job, evidence that the workplace has required resources must be stated and records kept. Refer to the infrastructure section of the TAS documents.

SAMPLE

This qualification aligns with the requirements of the Training Package. Staff and participants have access to:

- Library Services providing access to a range of reference books and publications, computer rooms with the latest software
- Classrooms equipped with resources including whiteboard
- Learning resources include class notes and educational materials located in **\\Um2\faculty-Me&E Learning materials**
- Fully equipped workshops and tools required for practical session are available and are in line with the training package requirements:
  - Welder
  - Drill
  - Grinder
  - Resource list for all tools required for workshops are available at **\\Um2\faculty-Me&E Resources list**
- The manufacturing company agreement lists workshop and equipment available to

Scope of Registration

ASSESSMENT STRATEGIES:

Aligns with the requirements of the Training Package/accredited course.

SAMPLE

Written task and observations of all units will be assessed on campus at Sydney Institute. Other methods of assessments may be conducted at the engineering manufacturer's workshop and include third party report. In addition a training record book will also be assessed.

Assessment Schedule are provided in the individual Student Assessment Guide – unit of competency. The units in this qualification are ungraded therefore the result recorded will be AC (achieved competence) or NC (not yet competent).

RPL is offered and granted on submission of satisfactory evidence, A student applies when they enrol in a TAFE qualification (or pay a fast-track services fee) and provide evidence that will help determine relevant skills, knowledge and qualifications.

Scope of Registration

DELIVERY STRATEGIES:

Aligns with the requirements of the Training Package/accredited course.

Sample

All units will be delivered as a combination of in theory rooms and practical workshops on campus at Sydney Institute and in addition students will be spending some time in an engineering manufacturer's workshop observing workplace practices, applying WH&S and working under close supervision. Formal agreements with the company's are saved in the team shares of each teaching section delivering this qualification as identified in the Training and Assessment Strategy completed as part of the ATR process.

Scope of Registration

ASSESSMENT VALIDATION PROCESS:

SAMPLE

Assessment validation processes are in place as per the Sydney Institute procedure which emphasises regular review and continuous improvement. All units are assessed based on risk with high risk units validated first. Validation is Institute based across all Sydney Institute through a faculty model using Institute procedure and associated documentation. Validated assessment are located in \\Um2\faculty-Me&E.Assessment Validation. Assessment validation is conducted with a combination of full-time, part-time teachers and industry representatives.

Scope of Registration

INDUSTRY CONSULTATION ON ASSESSMENT STRATEGIES:

Industry was consulted when developing the training and assessment strategy and there is evidence of this.

SAMPLE

- Industry consultation occurs at all levels of the organisation. See training and assessment strategy for consultation at each delivery location stored in faculty TAS team shares.
- Industry was consulted in the development of this course and includes:
- ABC Manufacturing
- XYZ Manufacturing
- Evidence of consultation and implementation is captured at \\Um2\faculty-Me&E.Industry Consultation Summary and/or Record Scope Application

OTHER REQUIREMENTS:

Select one

Yes

No

This refers to licencing and additional registration requirements.

Refer to ASQA – External Licensing and additional registration requirements spread sheet to determine you need to include additional requirements. A comment is required if you selected "Yes" above.

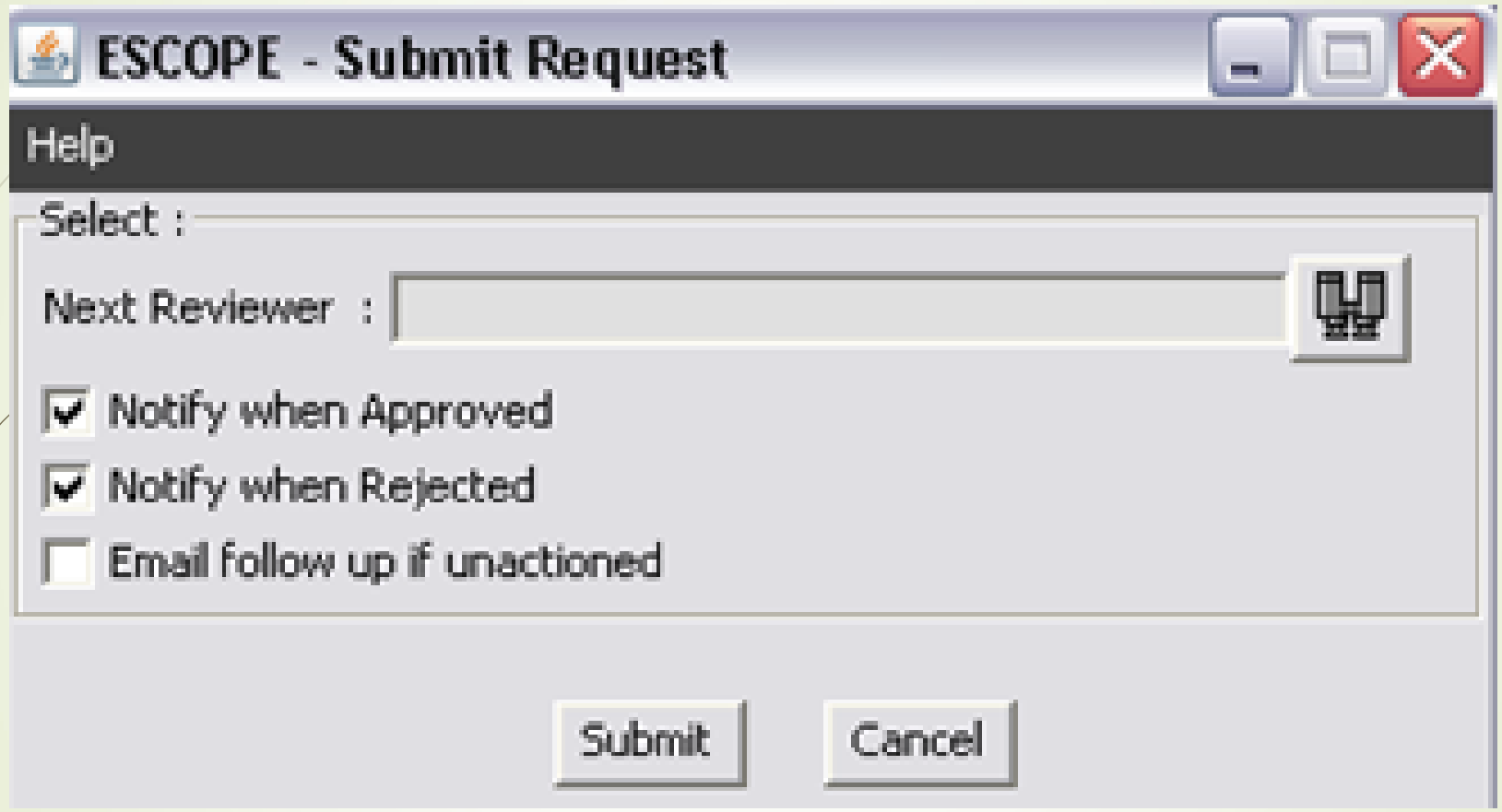
Scope requestors will need to check for other requirements for example but not limited to:

- Security qualifications: need to have obtained approval from Security and Licensing & Enforcement Directorate (SLED).
- Responsible service of alcohol and gambling: any qualification that contains these units must obtain approval from the NSW Casino, Liquor and Gaming Control Authority.
- Provide the Community Services & Health Industry Skills Council: with supporting documentation detailing proposed work/field placement agency or organisations for qualifications.
- Certificate IV in Celebrancy: must meet Attorney General Department requirements.
- Transport of dangerous goods: (accredited in Queensland 30744QLD) to deliver this unit must apply to NSW Department of Environment, Climate Change and Water (DECCW).

SAMPLE

As per the Training package there are no additional licensing requirements for this qualification.

Scope of Registration – eScope system



Multimedia Teaching & Learning System

Making teaching videos

Advantages

- Need to prepare one time
- Consistent teaching & lecturing
- Easy to convertible
- Promote students' self directed learning
- Teacher's role as facilitator

Disadvantage

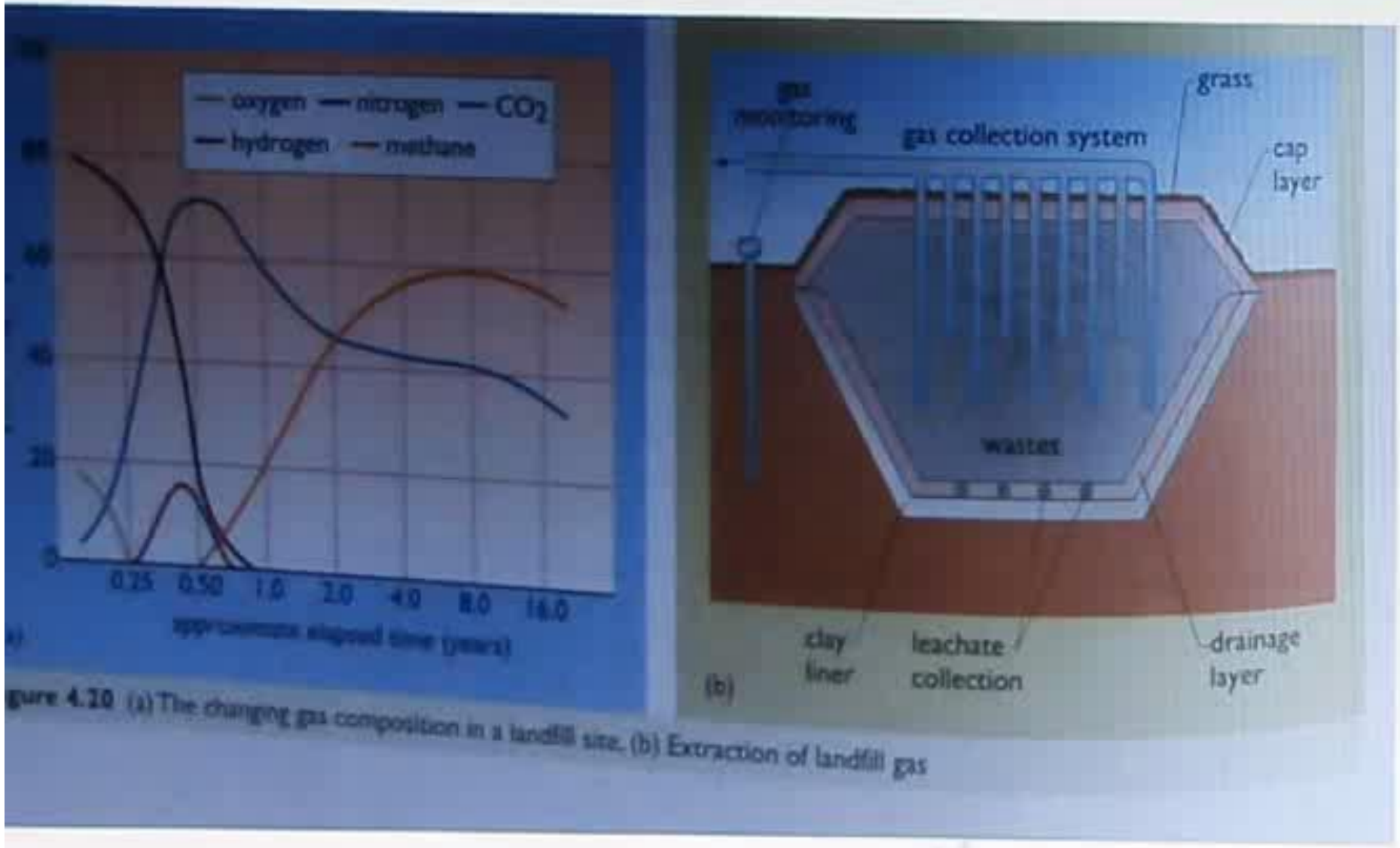
- Time consuming
- Needs technical resources

Sample Video–

Renewable Energy Resources Analysis

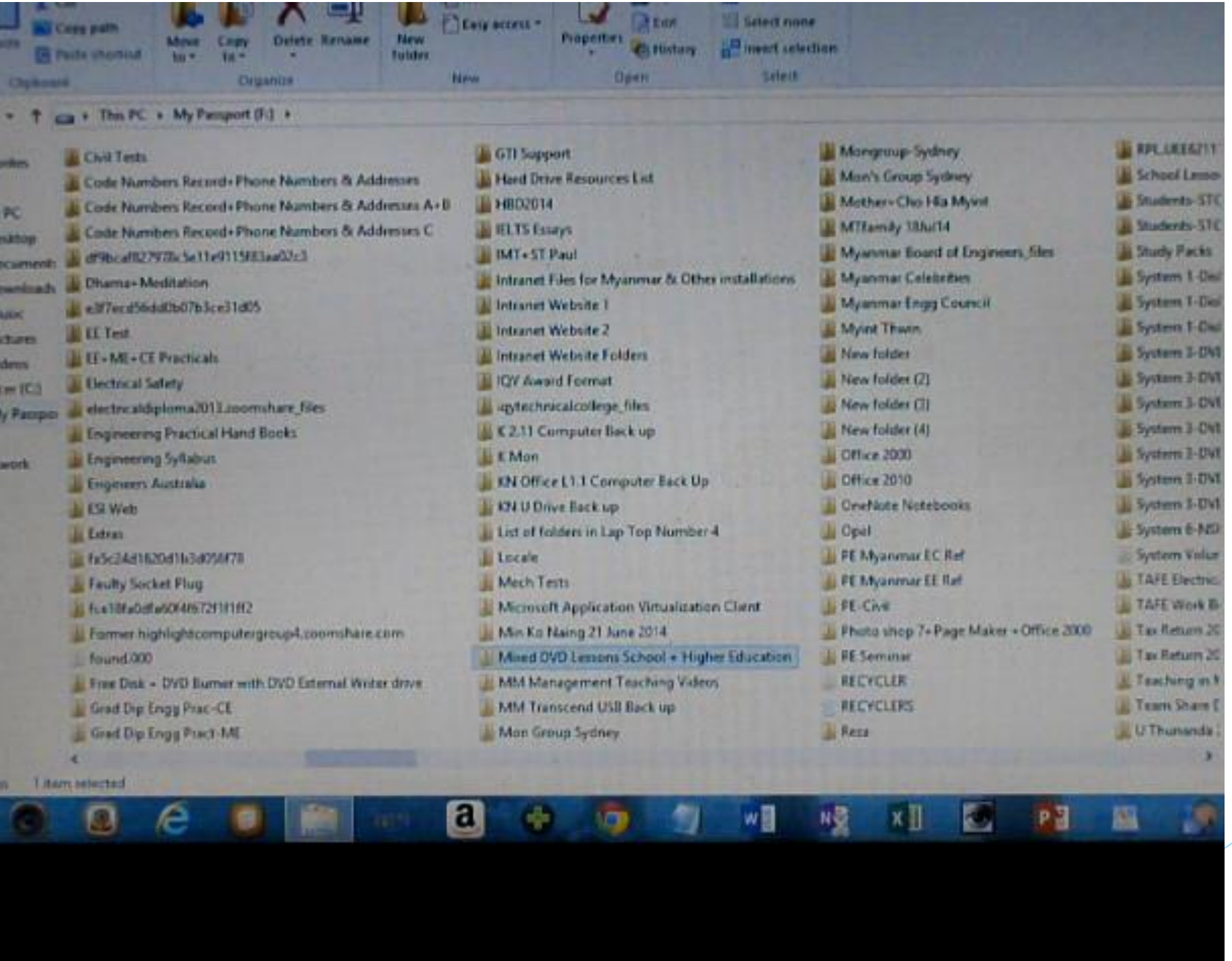
Lectured by Dr Kyaw Naing

- Bio energy
- Geothermal Energy
- Tidal Energy
- Exploring new energy resources for Myanmar
- Long coast line--- Potential of tidal energy



gure 4.20 (a) The changing gas composition in a landfill site. (b) Extraction of landfill gas

- POWER POINT COMPATIBLE VIDEO FORMAT– AVI
- AVI is large file size. To upload, it needs to convert to MP4
- Utilize video conversion software to convert AVI to MP4
- You can download the MP4 files from internet, convert it to AVI & insert it into your lesson power point slides.
- Video camera/ mobile phone/ digital camera video format-- AVI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Paste shortcut
Move to
Copy to
Delete
Rename
New folder
Easy access
Properties
Edit
History
Select none
Invert selection
Clipboard
Organize
New
Open
Select
This PC
My Passport (F:)
Civil Tests
Code Numbers Record+Phone Numbers & Addresses
Code Numbers Record+Phone Numbers & Addresses A+B
Code Numbers Record+Phone Numbers & Addresses C
Dhamma+Meditation
EE Test
EE+ME+CE Practicals
Electrical Safety
Engineering Practical Hand Books
Engineering Syllabus
Engineers Australia
ESI Web
Extras
Faulty Socket Plug
Former highlightcomputergroup4.zoomshare.com
found.000
Free Disk - DVD Burner with DVD External Writer drive
Grad Dip Engg Prac-CE
Grad Dip Engg Prac1-ME
GTI Support
Hard Drive Resources List
HBD2014
IELTS Essays
IMT+ST Paul
Intranet Files for Myanmar & Other installations
Intranet Website 1
Intranet Website 2
Intranet Website Folders
IQV Award Format
kgtechnicalcollege_files
K 2.11 Computer Back up
K Mon
KN Office L1.1 Computer Back Up
KN U Drive Back up
List of folders in Lap Top Number 4
Locale
Mech Tests
Microsoft Application Virtualization Client
Min Ko Naing 21 June 2014
Mixed DVD Lessons School + Higher Education
MM Management Teaching Videos
MM Transcend USB Back up
Mon Group Sydney
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Mother+Cho Hla Myint
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Myanmar Celebrities
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Office 2010
OneNote Notebooks
Opal
PE Myanmar EC Ref
PE Myanmar EE Ref
PE-Civil
Photo shop 7+Page Maker +Office 2000
PE Seminar
RECYCLER
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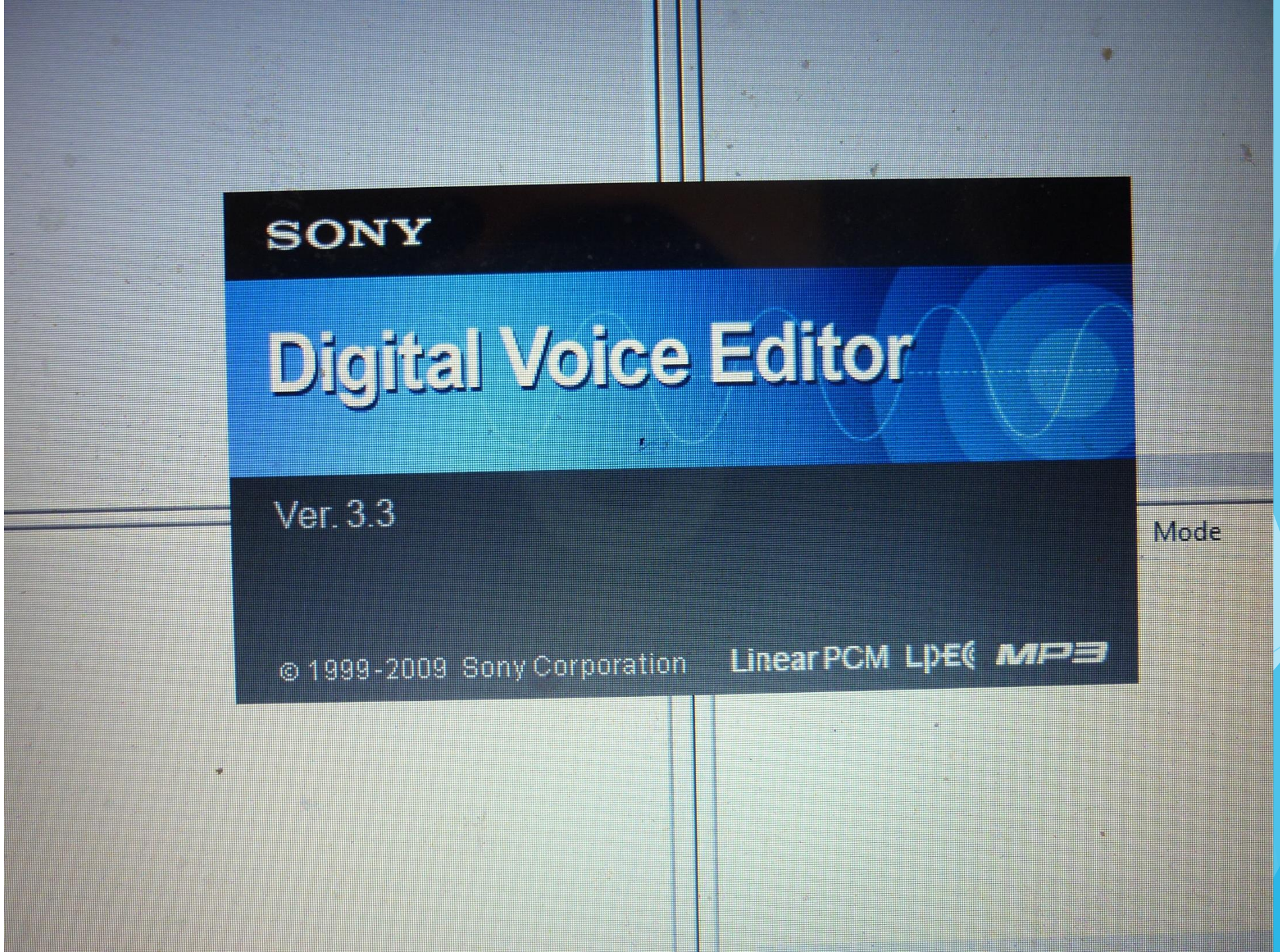
Study Packs
1 item selected

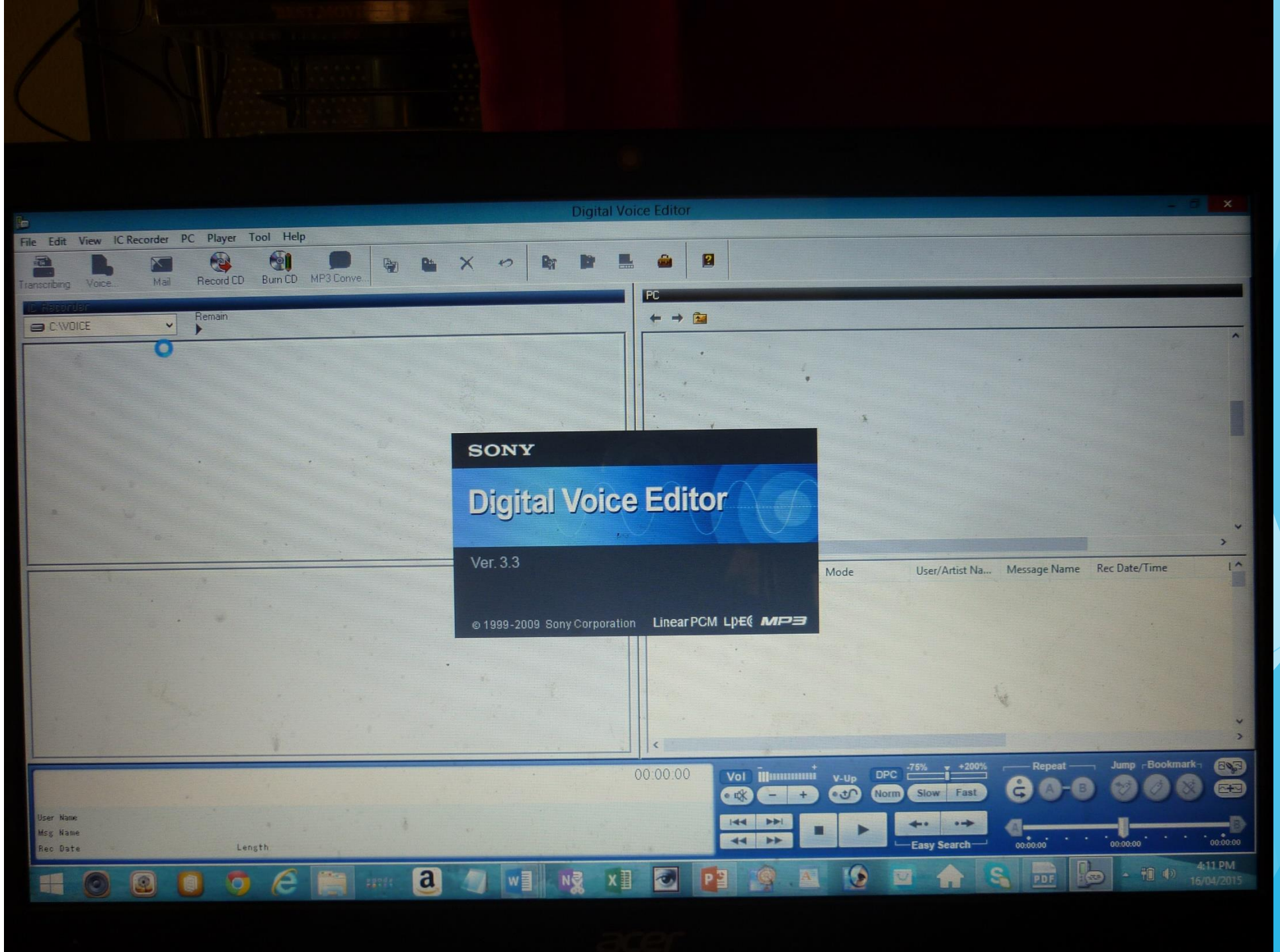
AUDIO

- Transferring audio from digital note taker
- Auditing

Equipment

- Digital Note Taker
- Audio Auditing Software


SONY
Digital Voice Editor
Ver. 3.3
© 1999-2009 Sony Corporation
Linear PCM
MP3
Mode


Digital Voice Editor
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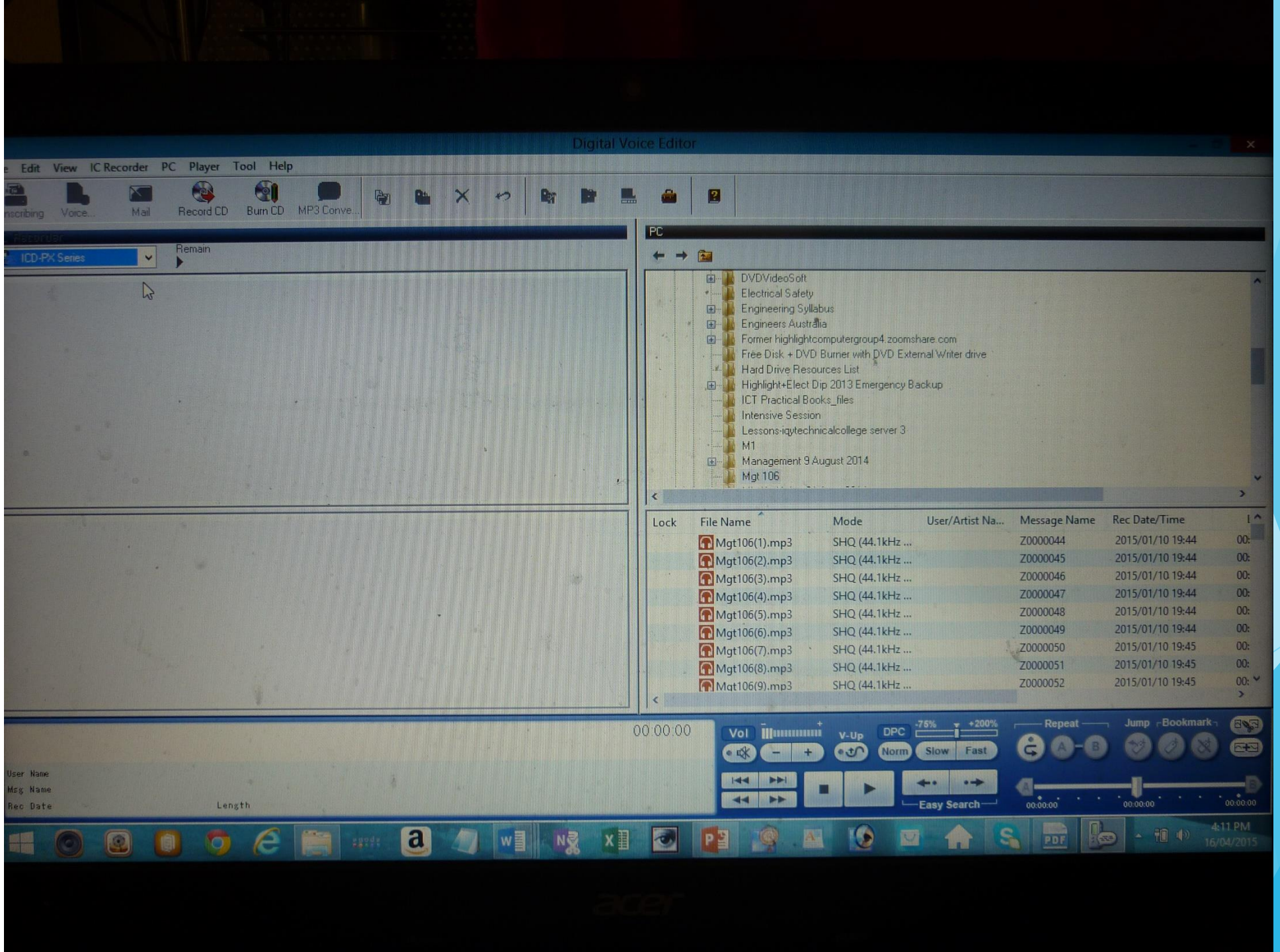
Digital Voice Editor
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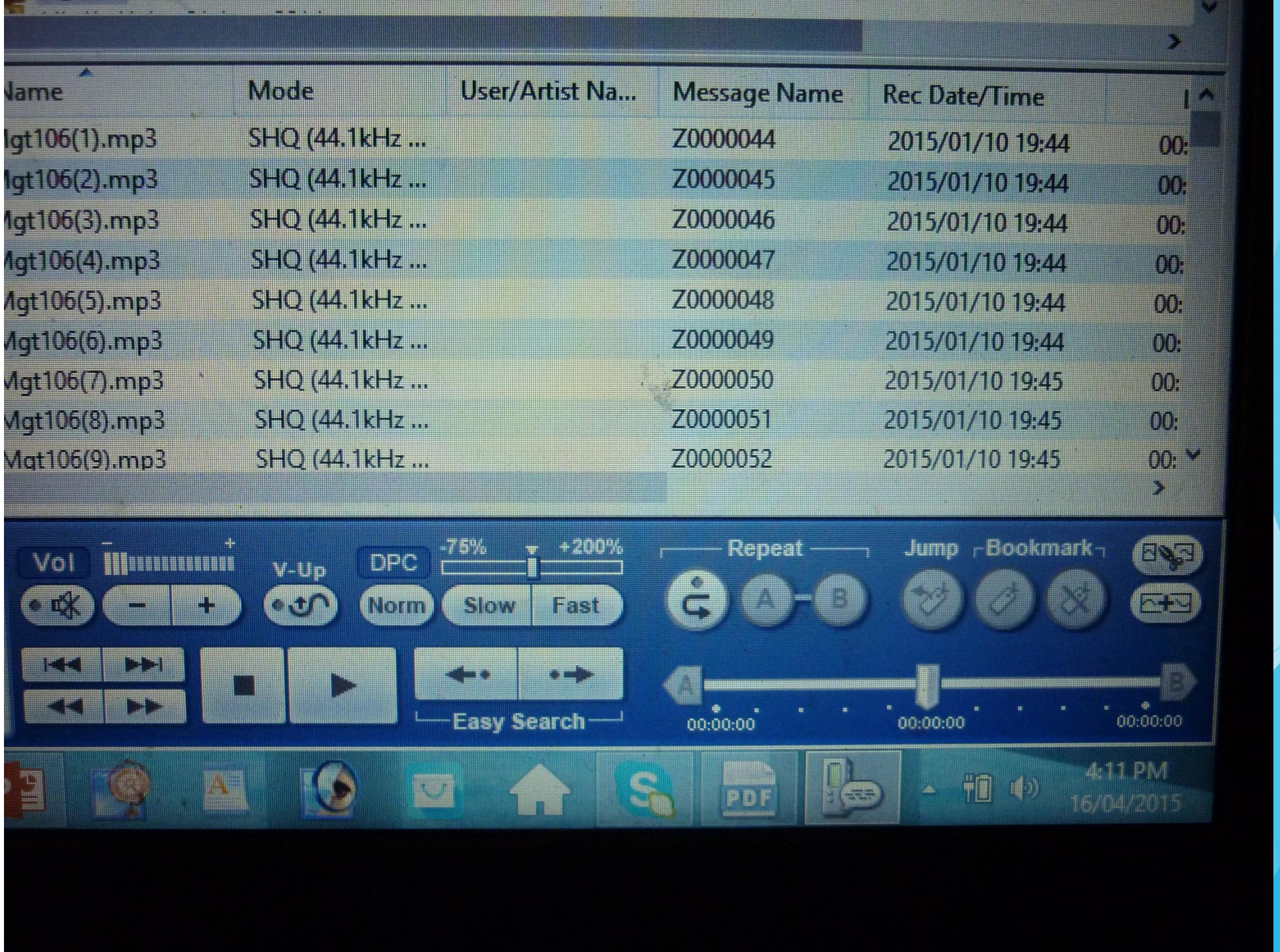
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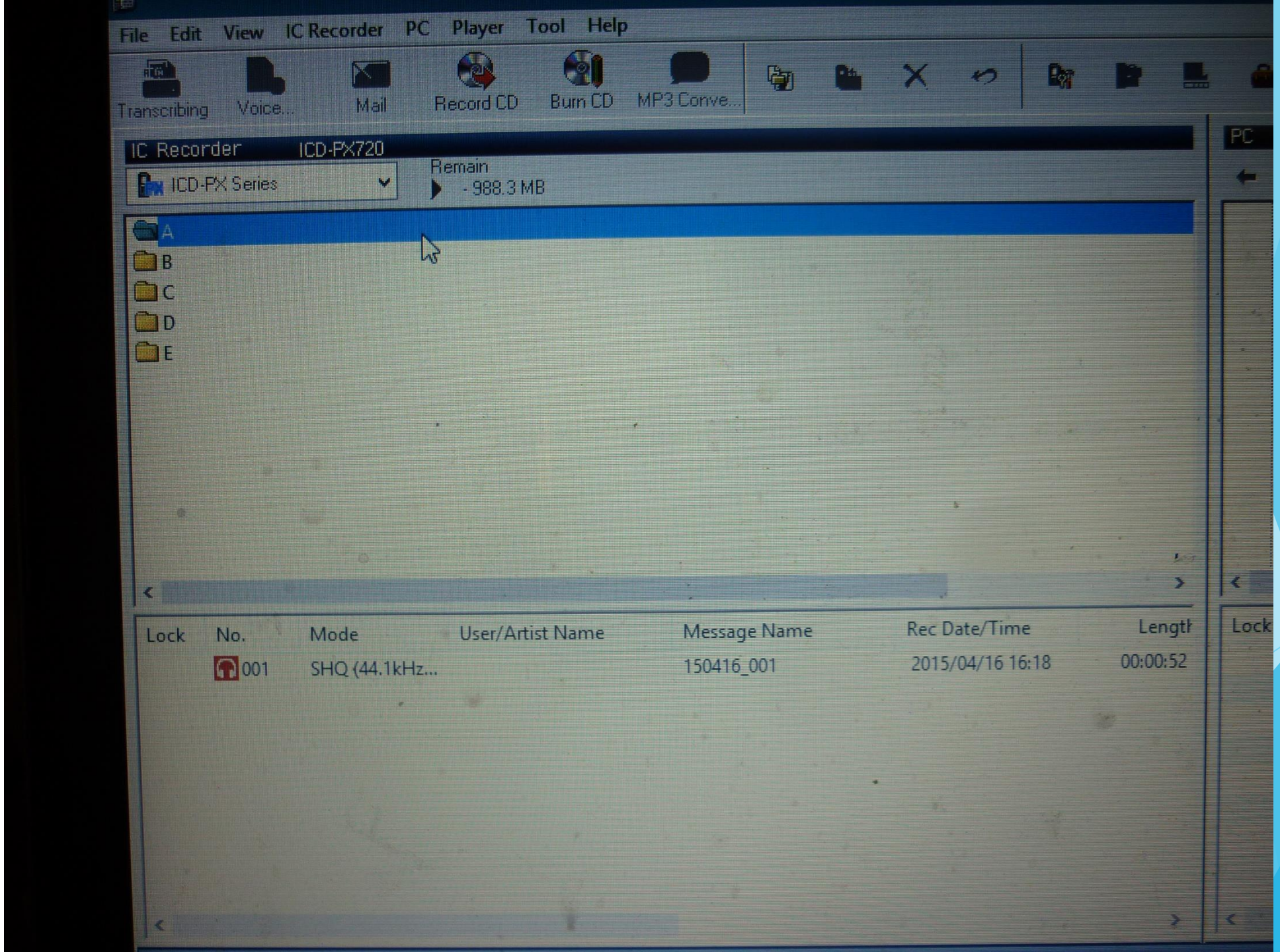
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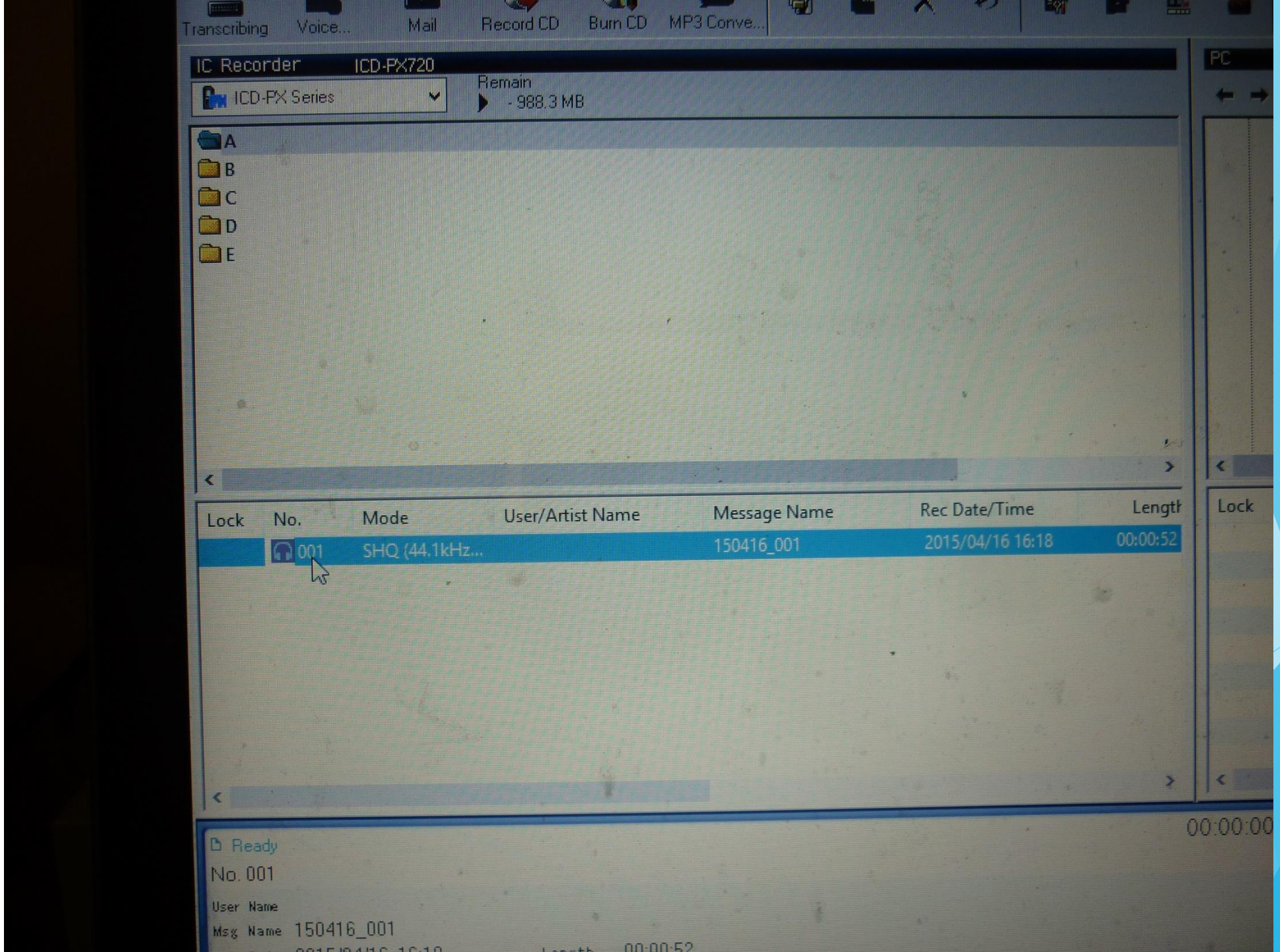
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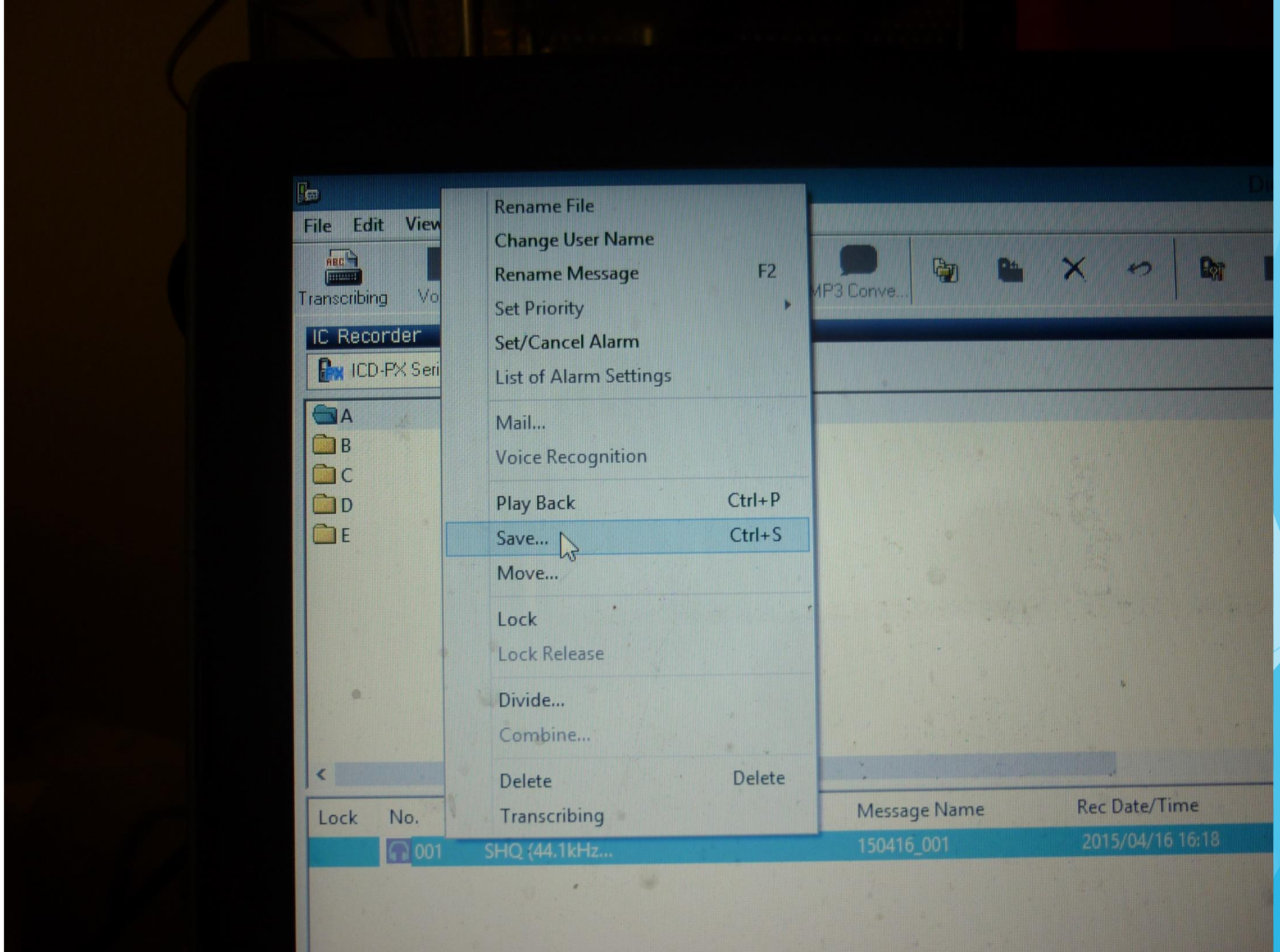
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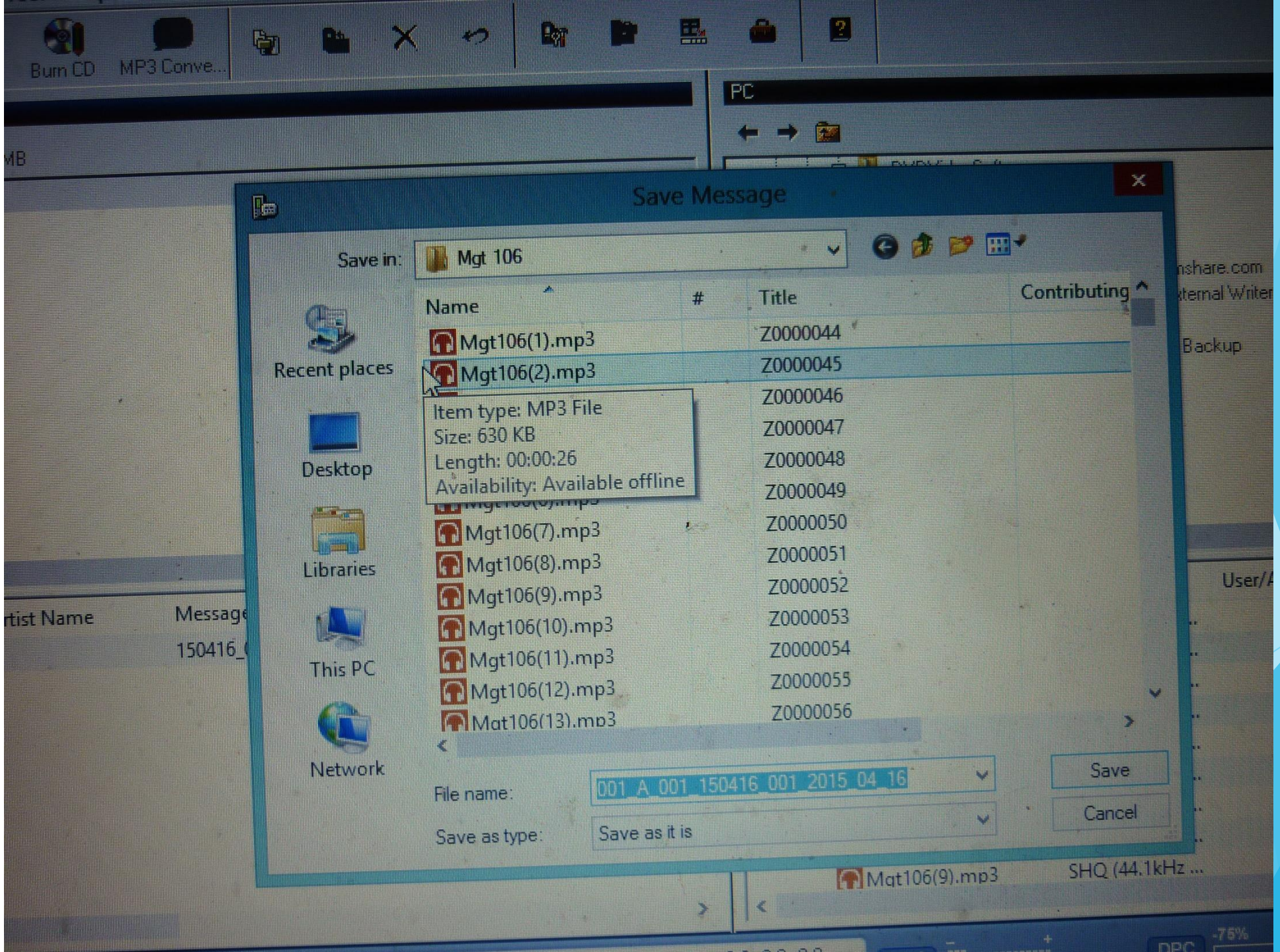
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Z0000056
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Size: 630 KB
Length: 00:00:26
Availability: Available offline
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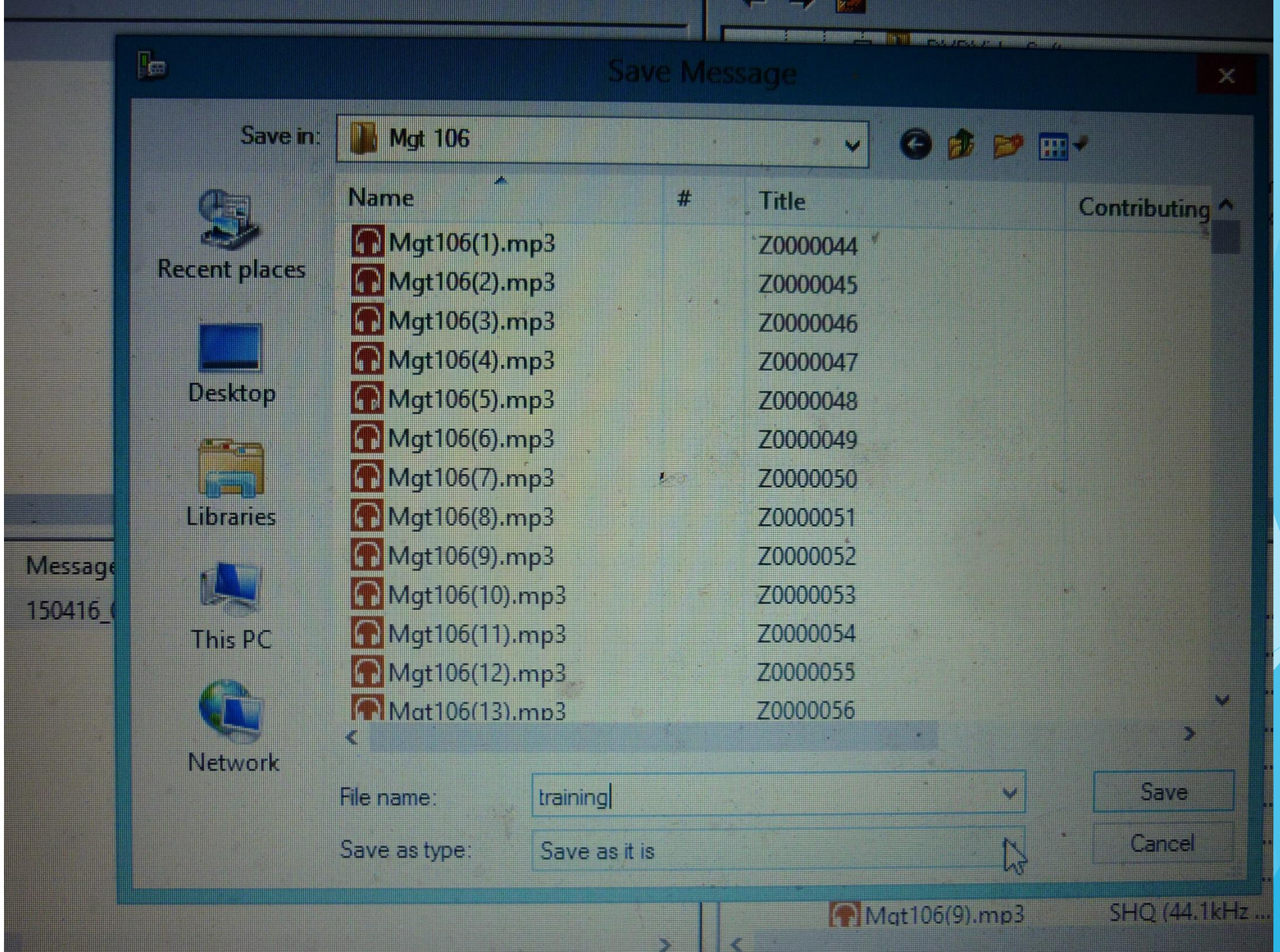
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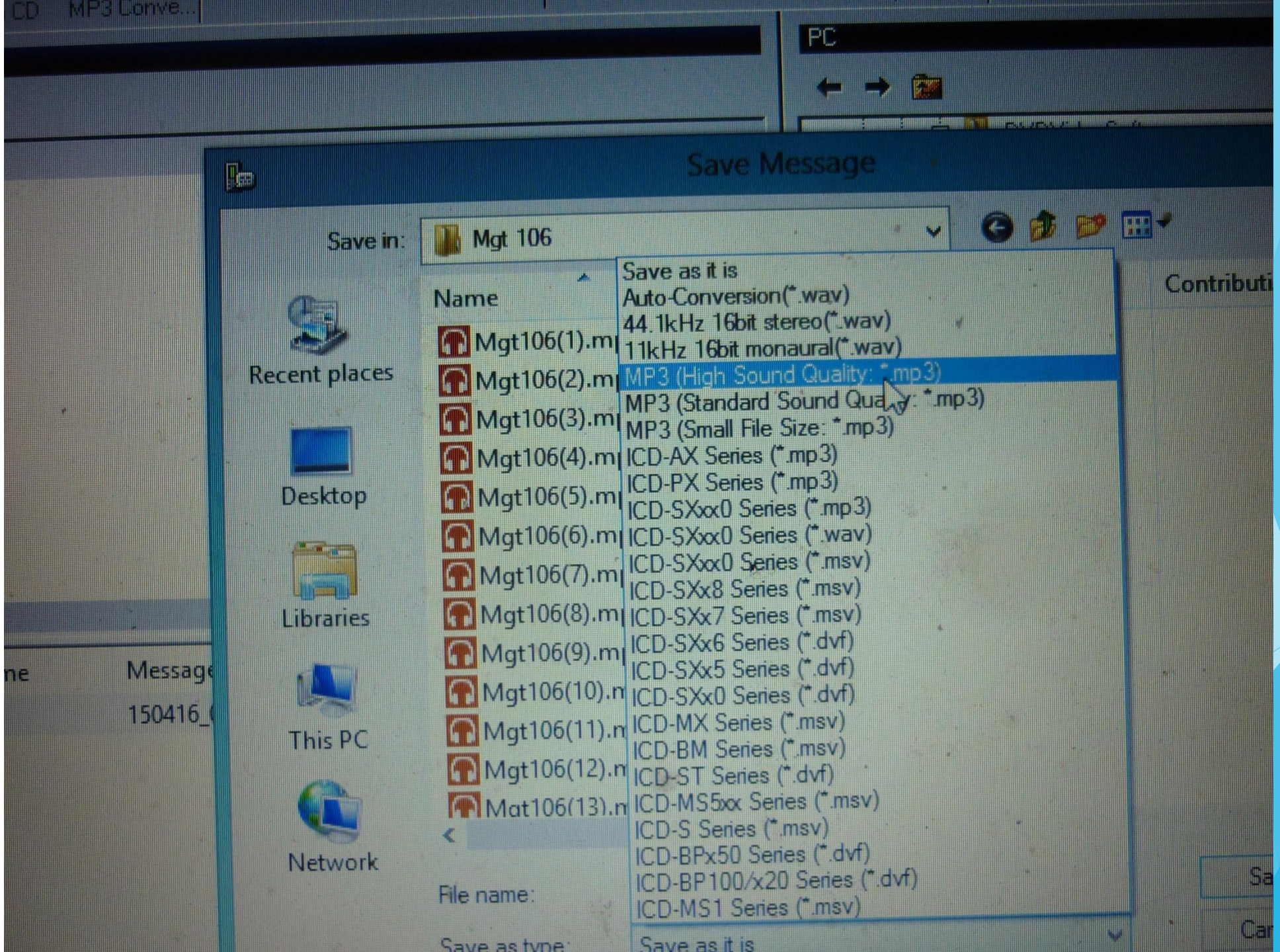
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MP3 (Standard Sound Quality: *.mp3)
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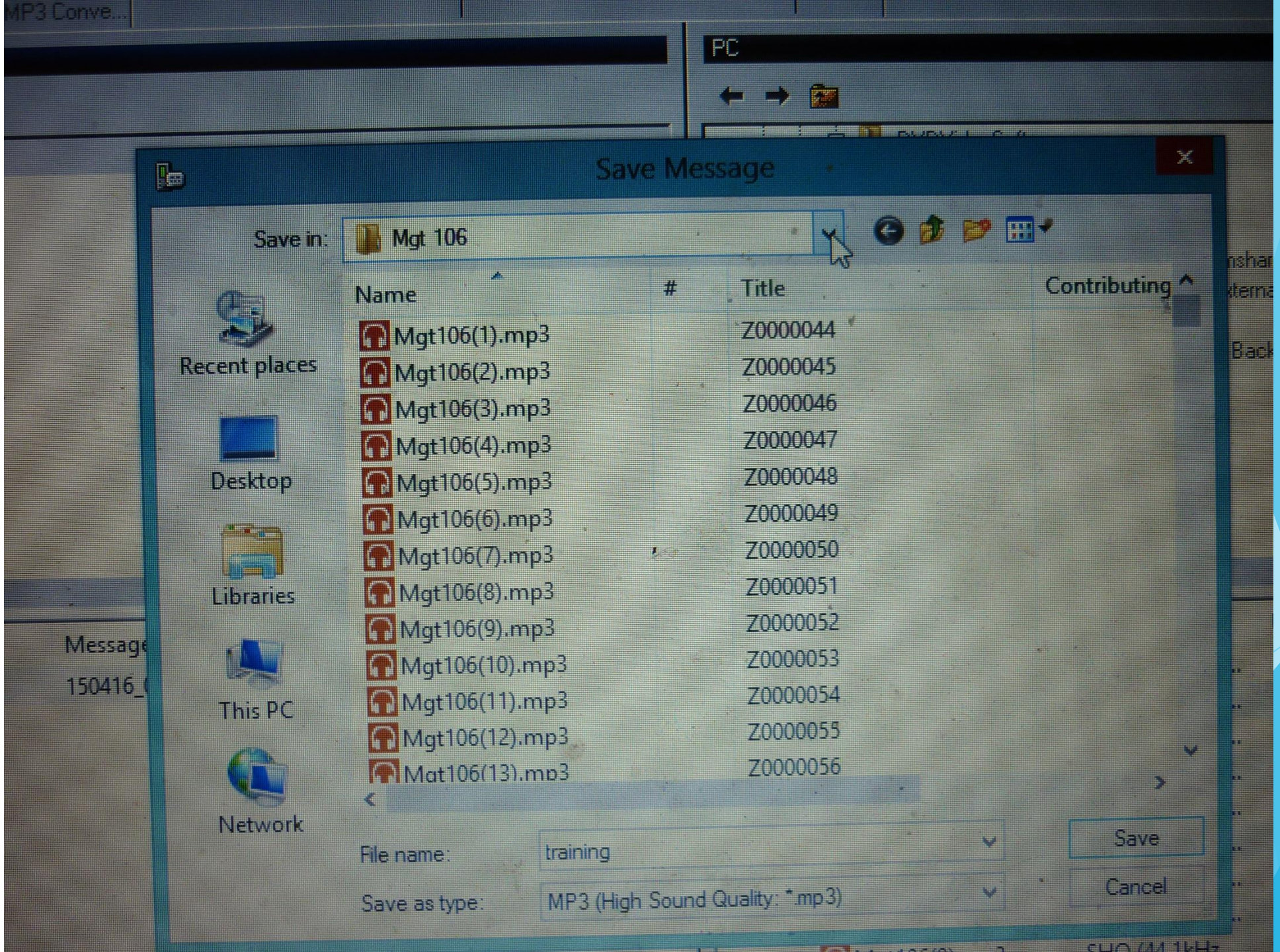
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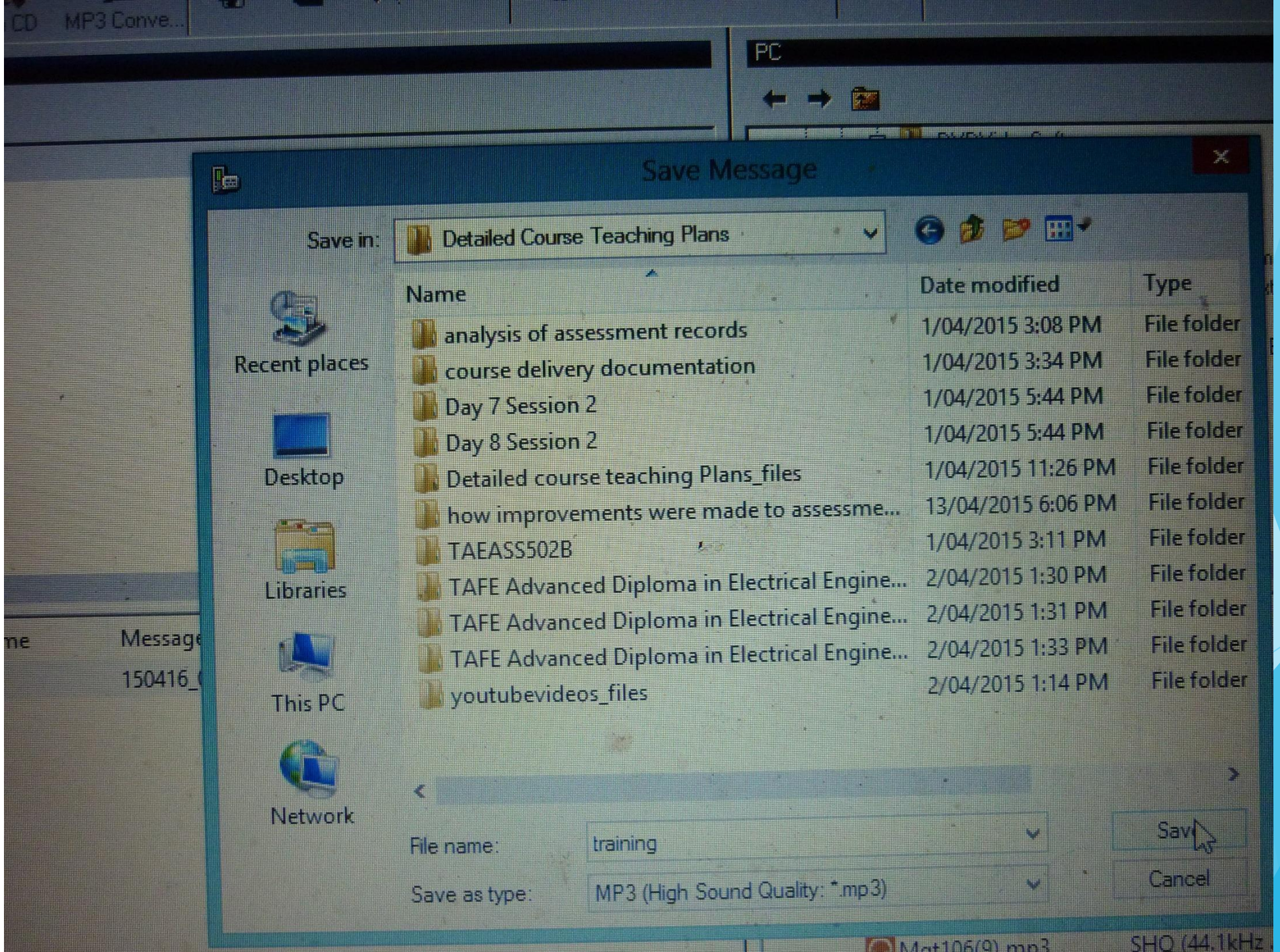
Save in:
Mgt 106
Name
#
Title
Contributing
Mgt106(1).mp3 Z0000044
Mgt106(2).mp3 Z0000045
Mgt106(3).mp3 Z0000046
Mgt106(4).mp3 Z0000047
Mgt106(5).mp3 Z0000048
Mgt106(6).mp3 Z0000049
Mgt106(7).mp3 Z0000050
Mgt106(8).mp3 Z0000051
Mgt106(9).mp3 Z0000052
Mgt106(10).mp3 Z0000053
Mgt106(11).mp3 Z0000054
Mgt106(12).mp3 Z0000055
Mgt106(13).mp3 Z0000056
Recent places
Desktop
Libraries
This PC
Network
File name:
training
Save as type:
MP3 (High Sound Quality: *.mp3)
Save
Cancel
PC


CD
MP3 Conve...
PC
Save Message
Save in:
Detailed Course Teaching Plans
Recent places
Desktop
Libraries
This PC
Network
Name
Date modified
Type
analysis of assessment records
1/04/2015 3:08 PM
File folder
course delivery documentation
1/04/2015 3:34 PM
File folder
Day 7 Session 2
1/04/2015 5:44 PM
File folder
Day 8 Session 2
1/04/2015 5:44 PM
File folder
Detailed course teaching Plans_files
1/04/2015 11:26 PM
File folder
how improvements were made to assessme...
13/04/2015 6:06 PM
File folder
TAEASS502B
1/04/2015 3:11 PM
File folder
TAFE Advanced Diploma in Electrical Engine...
2/04/2015 1:30 PM
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TAFE Advanced Diploma in Electrical Engine...
2/04/2015 1:31 PM
File folder
TAFE Advanced Diploma in Electrical Engine...
2/04/2015 1:33 PM
File folder
youtubevideos_files
2/04/2015 1:14 PM
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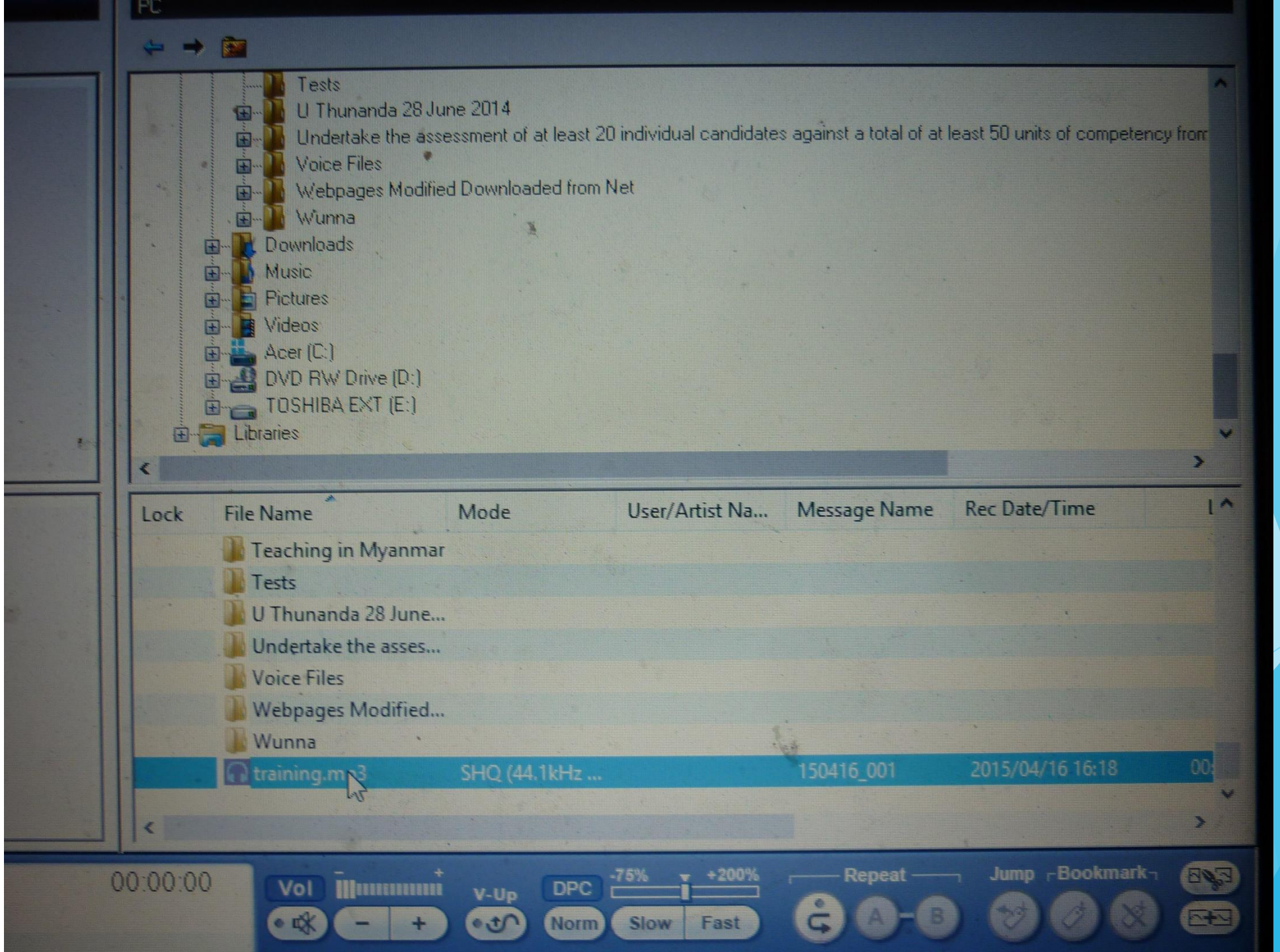
Cancel
Message
150416_
SHQ (44.1kHz


Tests
U Thunanda 28 June 2014
Undertake the assessment of at least 20 individual candidates against a total of at least 50 units of competency from
Voice Files
Webpages Modified Downloaded from Net
Wunna
Downloads
Music
Pictures
Videos
Acer (C:)
DVD RW Drive (D:)
TOSHIBA EXT (E:)
Libraries
Lock
File Name
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2015/04/16 16:18
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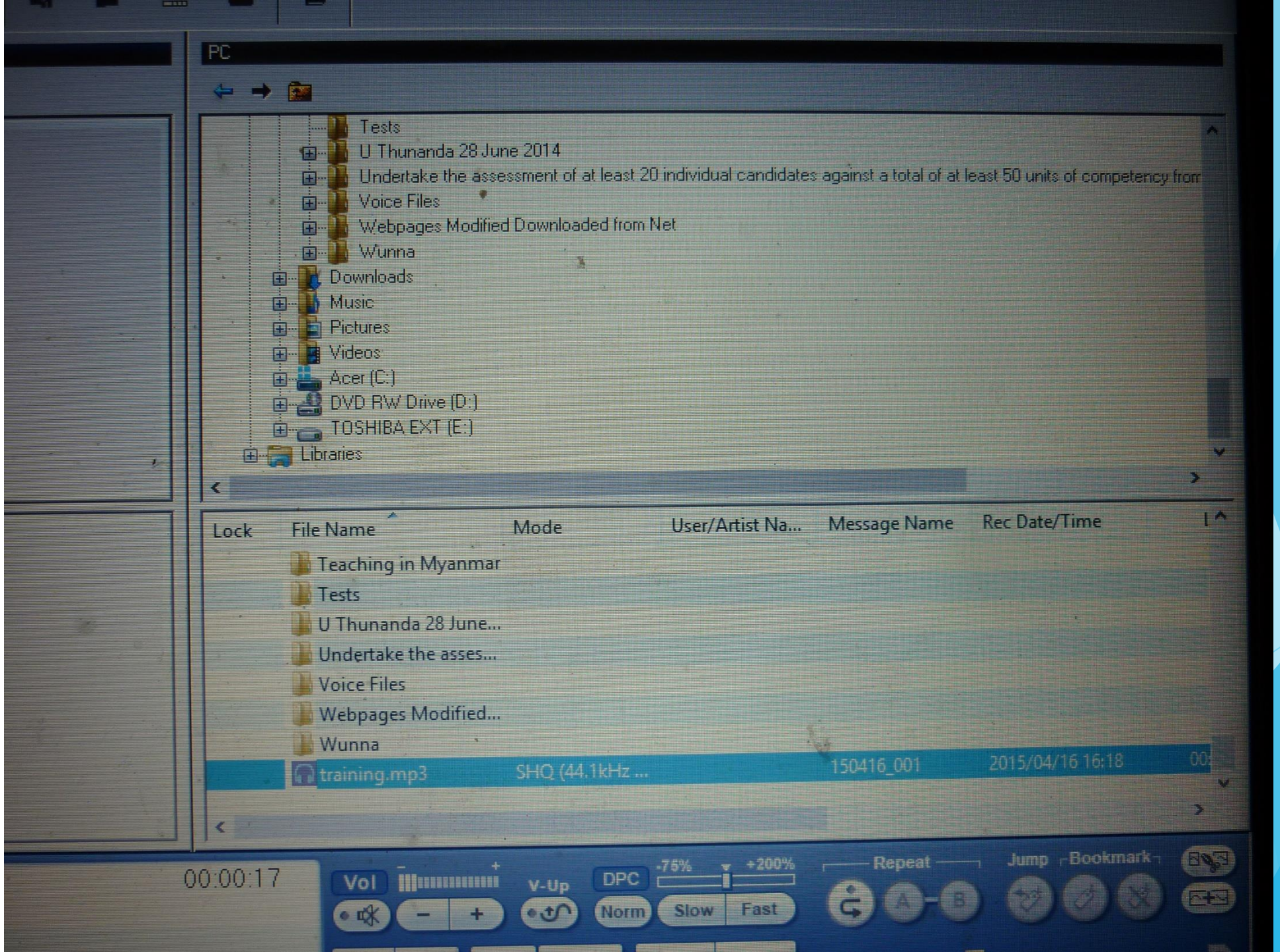
V-Up
DPC
-75%
+200%
Repeat
Jump
Bookmark
Norm
Slow
Fast
A
B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U Thunanda 28 June 2014
Undertake the assessment of at least 20 individual candidates against a total of at least 50 units of competency from
Voice Files
Webpages Modified Downloaded from Net
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Downloads
Music
Pictures
Videos
Acer (C:)
DVD RW Drive (D:)
TOSHIBA EXT (E:)
Libraries
Lock
File Name
Mode
User/Artist Na...
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V-Up
DPC
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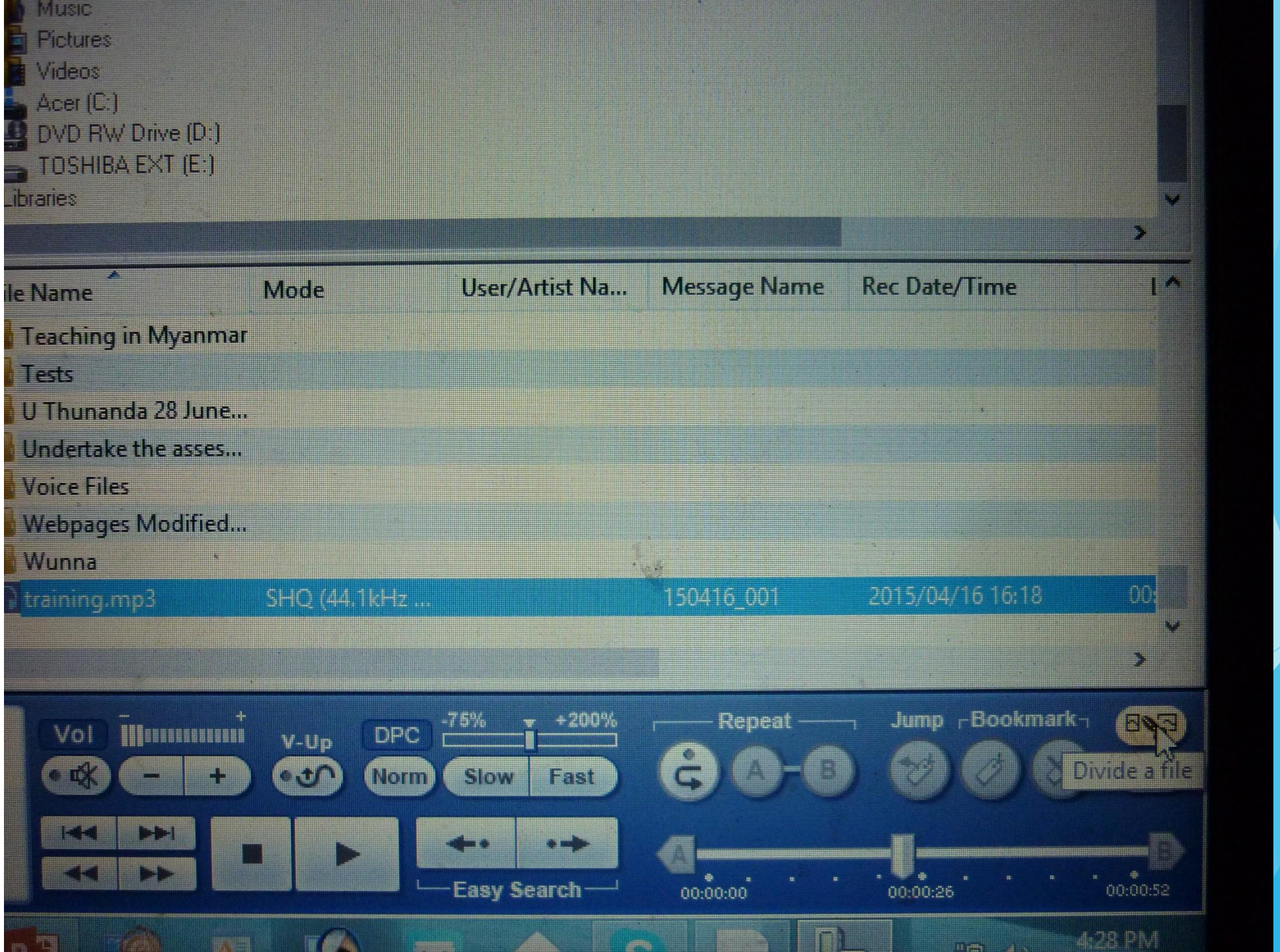
+200%
Repeat
Jump
Bookmark
Norm
Slow
Fast


Music
Pictures
Videos
Acer (C:)
DVD RW Drive (D:)
TOSHIBA EXT (E:)
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2015/04/16 16:18
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+200%
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Fast
Repeat
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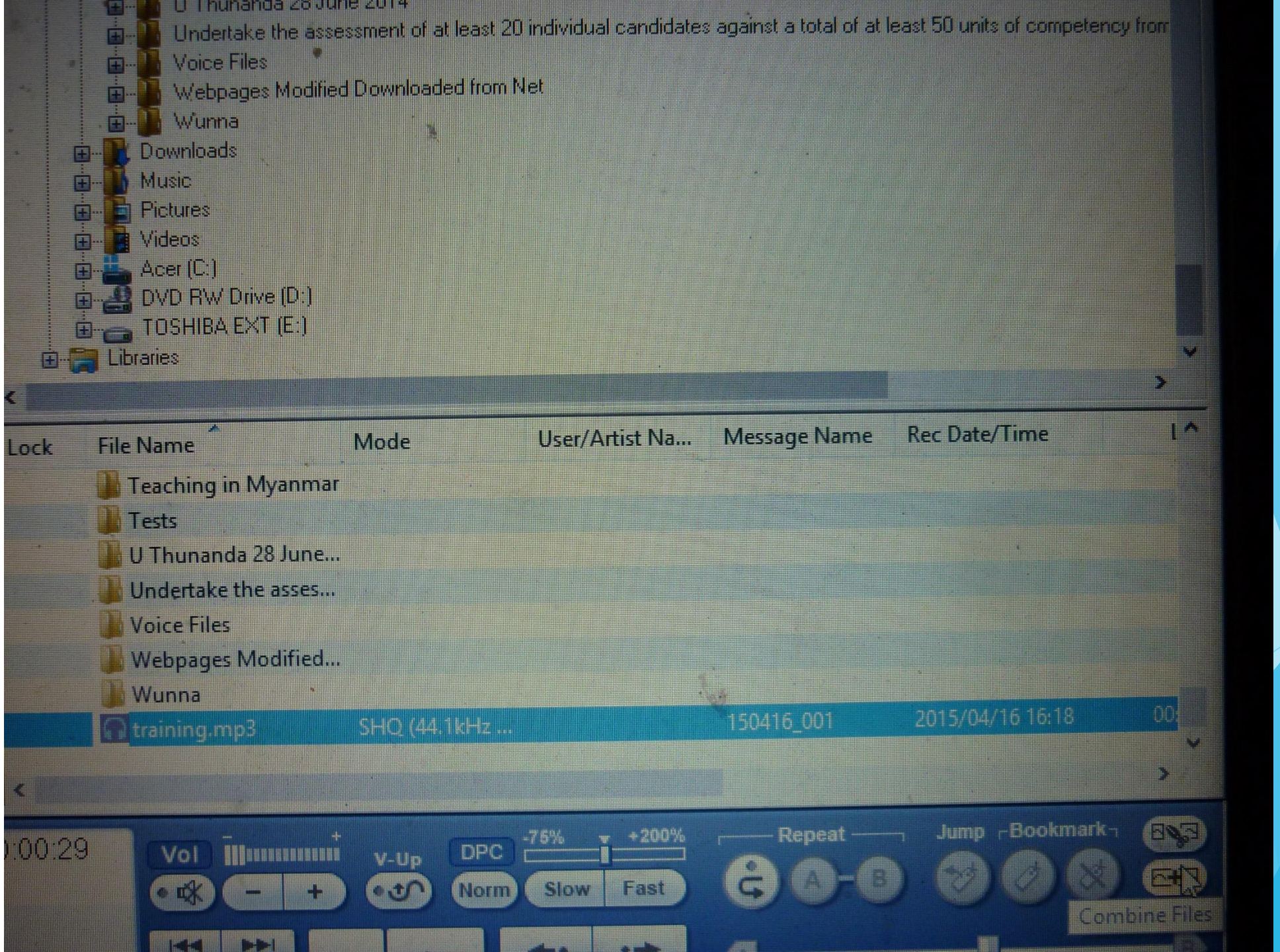
B
Jump
Bookmark
Divide a file
Easy Search
00:00:00
00:00:26
00:00:52
4:28 PM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Undertake the assessment of at least 20 individual candidates against a total of at least 50 units of competency from
Voice Files
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Pictures
Videos
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DVD RW Drive (D:)
TOSHIBA EXT (E:)
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2015/04/16 16:18
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V-Up
DPC
-75%
+200%
Repeat
Jump
Bookmark
Norm
Slow
Fast
A
B
Combine Files

SUCCESSIVE DIFFERENTIATION

$$y = x^3 + 3x^2 + 4$$

$$\frac{dy}{dx} = \frac{d}{dx}\left[x^3 + 3x^2 + 4\right]$$

$$= \frac{d}{dx}x^3 + \frac{d}{dx}3x^2 + \frac{d}{dx}4$$

$$= 3x^{3-1} + 3 \times 2x^{2-1} + 0$$

$$= 3x^2 + 6x$$

$$\frac{d^2y}{dx^2} = \frac{d}{dx}\left[3x^2 + 6x\right]$$

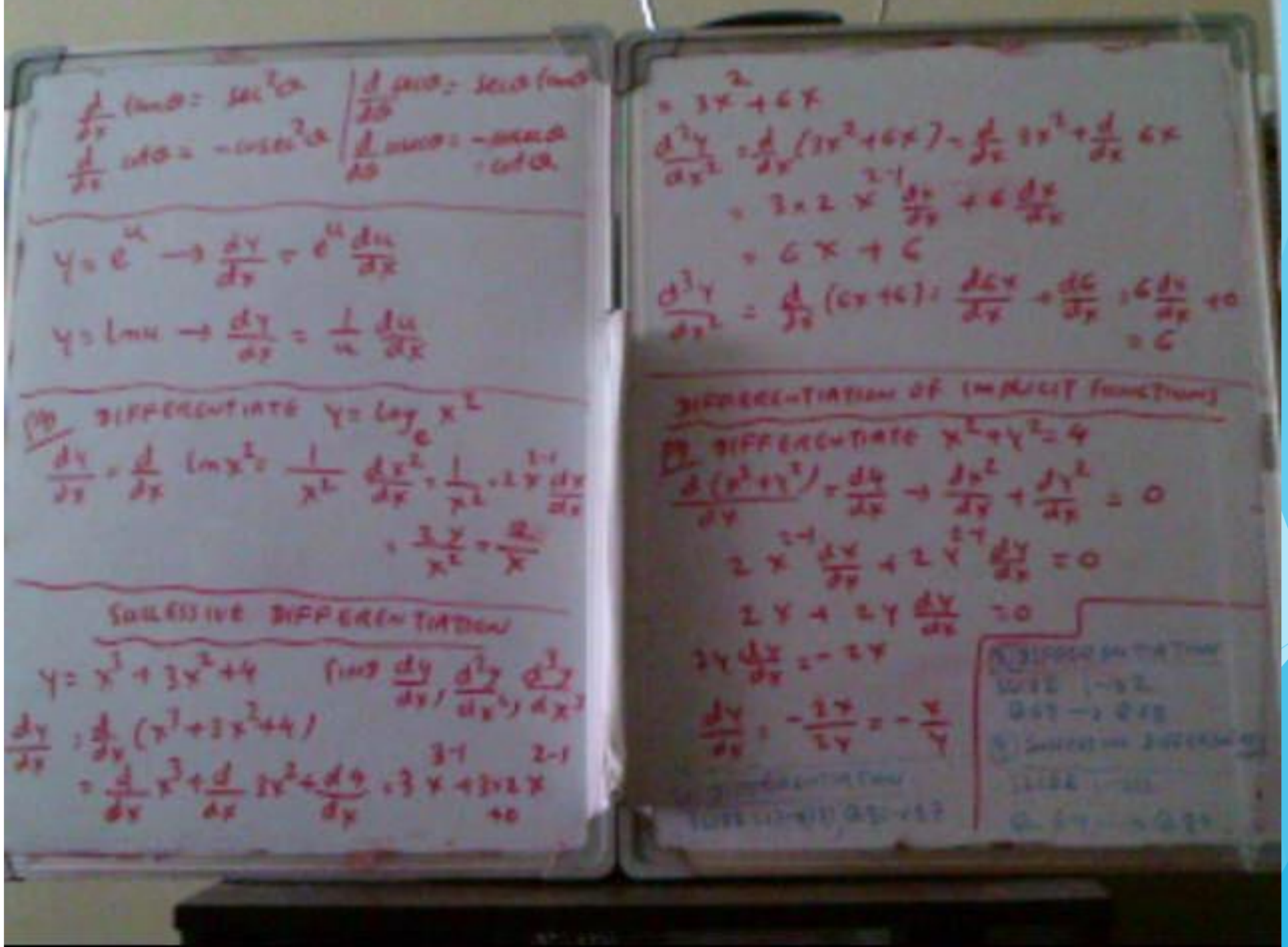
$$= \frac{d}{dx}3\left[x^2 + 2x\right]$$

$$\frac{d^2y}{dx^2} = 3\left[\frac{dx^2}{dx} + \frac{d2x}{dx}\right]$$

$$= 3\left[2x^{2-1} + 2\right]$$

$$= 3\left[2x + 2\right]$$

$$= 6(x+1) \quad \ast$$


$\frac{d}{dx}(\tan\theta) = \sec^2\theta$
$\frac{d}{dx}(\cot\theta) = -\operatorname{cosec}^2\theta$
$\frac{d}{d\theta}(\sec\theta) = \sec\theta\tan\theta$
$\frac{d}{d\theta}(\operatorname{cosec}\theta) = -\operatorname{cosec}\theta\cot\theta$
$y = e^u \rightarrow \frac{dy}{dx} = e^u \frac{du}{dx}$
$y = \ln u \rightarrow \frac{dy}{dx} = \frac{1}{u}\frac{du}{dx}$
(10) DIFFERENTIATE $y = \log_e x^2$
$\frac{dy}{dx} = \frac{d}{dx}\ln x^2 = \frac{1}{x^2}\frac{dx^2}{dx} = \frac{1}{x^2} \cdot 2x^{2-1}\frac{dx}{dx}$
$= \frac{2x}{x^2} = \frac{2}{x}$
SUCCESSIVE DIFFERENTIATION
$y = x^3 + 3x^2 + 4$ find $\frac{dy}{dx}, \frac{d^2y}{dx^2}, \frac{d^3y}{dx^3}$
$\frac{dy}{dx} = \frac{d}{dx}(x^3 + 3x^2 + 4)$
$= \frac{d}{dx}x^3 + \frac{d}{dx}3x^2 + \frac{d}{dx}4 = 3x^{3-1} + 3 \times 2x^{2-1} + 0$
$= 3x^2 + 6x$
$\frac{d^2y}{dx^2} = \frac{d}{dx}(3x^2 + 6x) = \frac{d}{dx}3x^2 + \frac{d}{dx}6x$
$= 3 \times 2x^{2-1}\frac{dx}{dx} + 6\frac{dx}{dx}$
$= 6x + 6$
$\frac{d^3y}{dx^2} = \frac{d}{dx}(6x + 6) = \frac{d6x}{dx} + \frac{d6}{dx} = 6\frac{dx}{dx} + 0$
$= 6$
DIFFERENTIATION OF IMPLICIT FUNCTIONS
DIFFERENTIATE $x^2 + y^2 = 4$
$\frac{d(x^2 + y^2)}{dx} = \frac{d4}{dx} \rightarrow \frac{dx^2}{dx} + \frac{dy^2}{dx} = 0$
$2x^{2-1}\frac{dx}{dx} + 2y^{2-1}\frac{dy}{dx} = 0$
$2x + 2y\frac{dy}{dx} = 0$
$2y\frac{dy}{dx} = -2x$
$\frac{dy}{dx} = -\frac{2x}{2y} = -\frac{x}{y}$

Samples

Learning Platform example

http://www.highlightcomputer.com/onlineteaching1.htm

Using multimedia & videos in teaching & Learning

http://www.highlightcomputer.com/videos1.htm

Using Youtube in teaching & learning

http://www.highlightcomputer.com/videos2.htm

Online & E-Learning Lessons

www.highlightcomputer.com/onlineteaching1.htm

Online & E-Learning Lessons can be studied by the following ways

- **Log in the learning support site, download the study guides, then download the lessons , references and exercises. Study & submit the assignments.**
- **Login the learning support site, download the online multimedia lessons, study & sit the tests.**
- **Receive the CD containing the lessons, study & submit the assignments.**
- **Receive the online link by e-mail from the tutor, download the study guides, then download the lessons , references and exercises. Study & submit the assignments.**
- **Assignments can be submitted by e-mail.**

Click HERE to log in the lesson sequences. The link from PDF File needs the password. You will need the password. The password will be issued to the enrolled students.

Click HERE to log in the online study materials. You will need the password. The password will be issued to the enrolled students.

Click HERE to log in the online videos. You will need the password. The password will be issued to the enrolled students.

Click HERE to log in to the online electrical/ mechanical/civil practical materials. You will need the password.

The password will be issued to the enrolled students.

Click HERE to log in to the Learning Platform

Click HERE to log in to the following programs

- Diploma in Automotive Engineering+
- Diploma in Marine Engineering+
- Bachelor of Education+
- Master of Management+
- Master of Applied Science (Information Technology)+
- Master of Science (Renewable Energy)

Learning Support Study Guides

Click HERE to log in to the following programs

- **Bachelor of Applied Engineering (Electrical & Electronics) with Certificate IV in Electrical & Electronics Trades Studies**

Click HERE to log in to the following programs

VIDEO EDITING

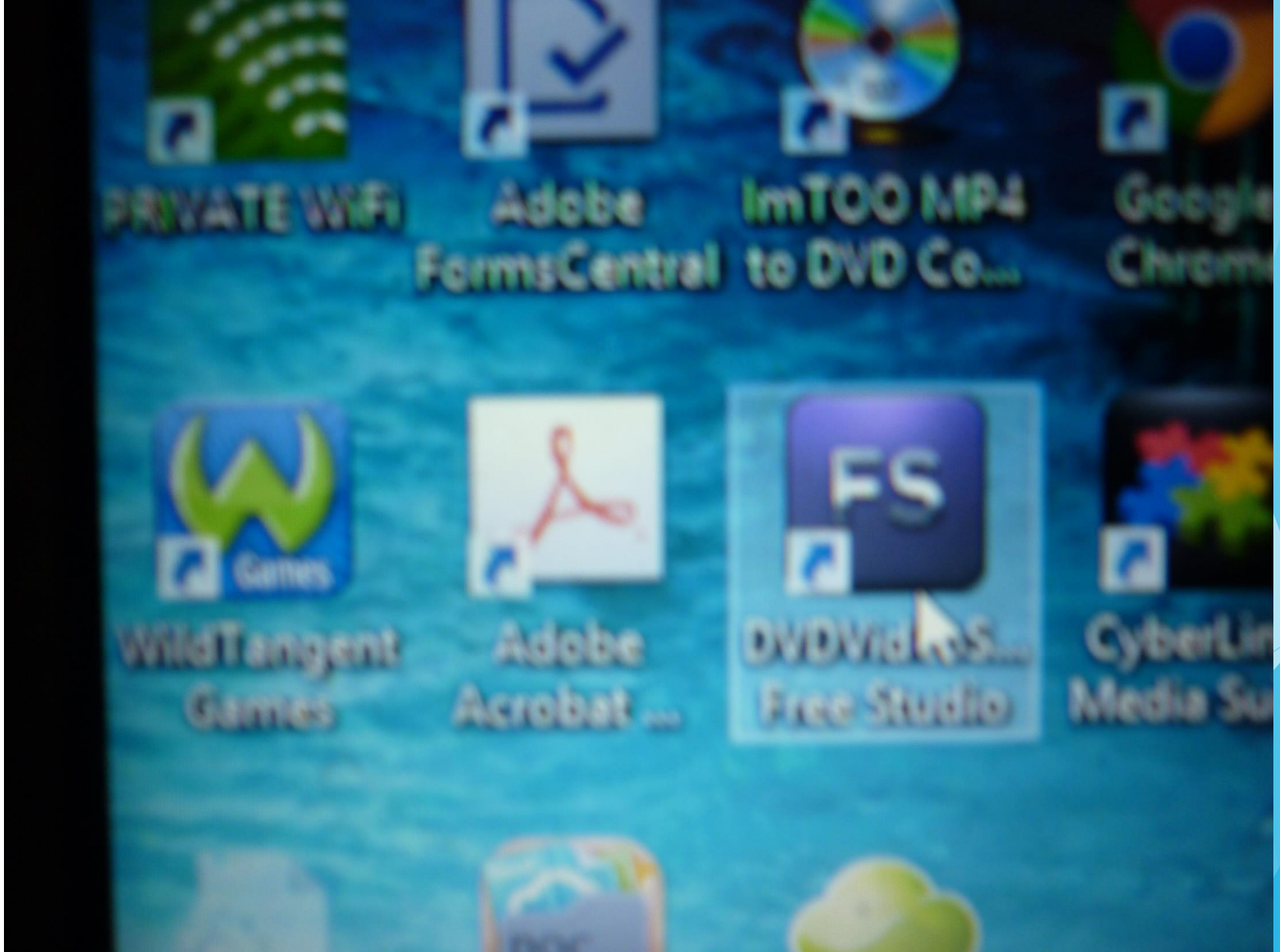
Conversion of video file format using video editing software

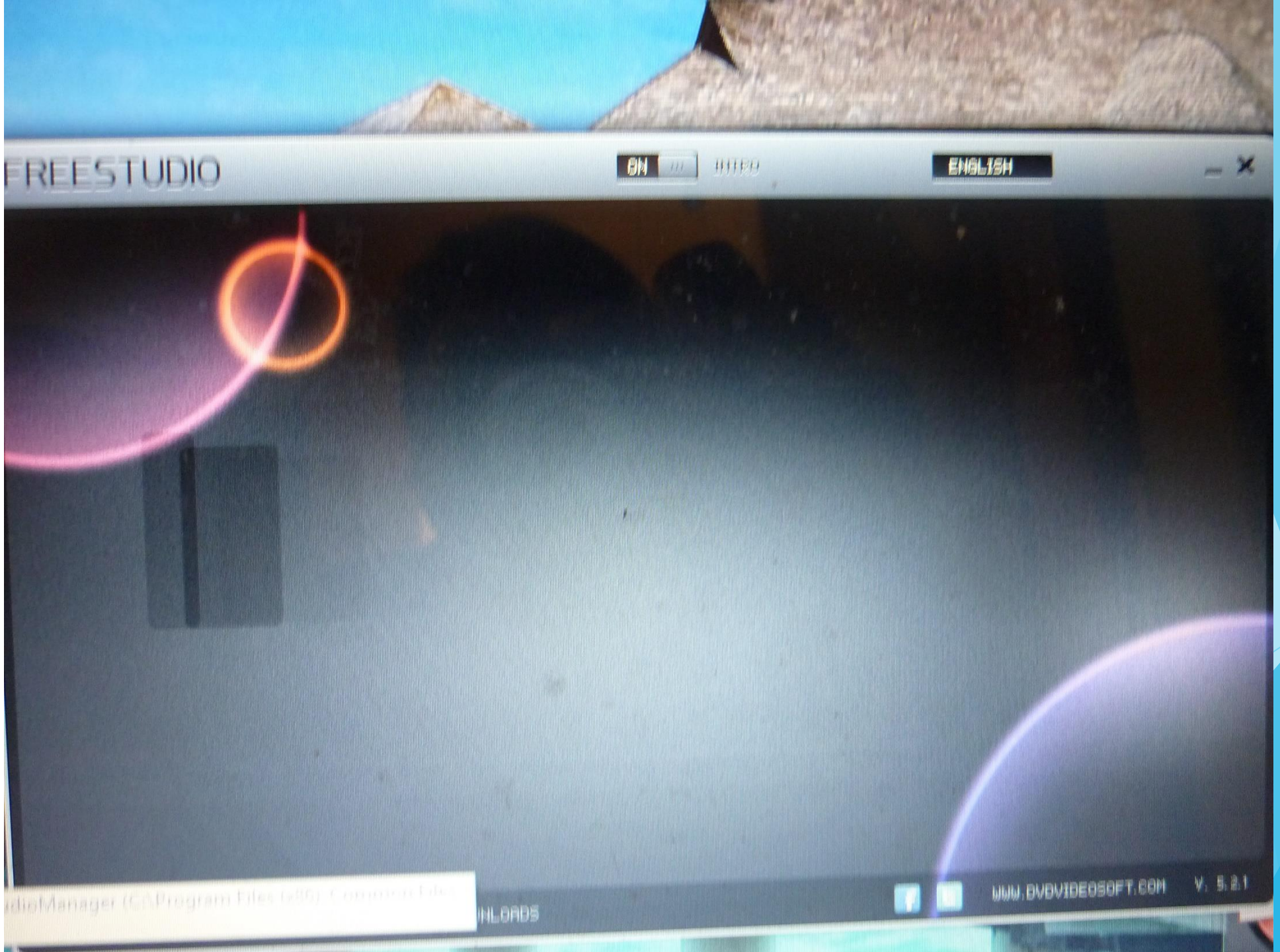
Software

- DVD/Video Free Studio

Convert MP4-AVI-DVD file format

- **MP4- Small file size to upload internet / Youtube**
- **AVI- For power point**
- **DVD- Compatible with DVD Player/ Portable DVD Player/ DVD disk**


PRIVATE WiFi
Adobe FormsCentral
ImTOO MP4 to DVD Co...
Google Chrome
WildTangent Games
Adobe Acrobat ...
DVDVideoSoft Free Studio
CyberLink Media Suite


FREESTUDIO
ON
ENGLISH
WWW.DVDVIDEOSOFT.COM
V. 5.2.1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CyberLink PhotoDirec
Acer Remo Files
eBay
Google Chrome
FREESTUDIO
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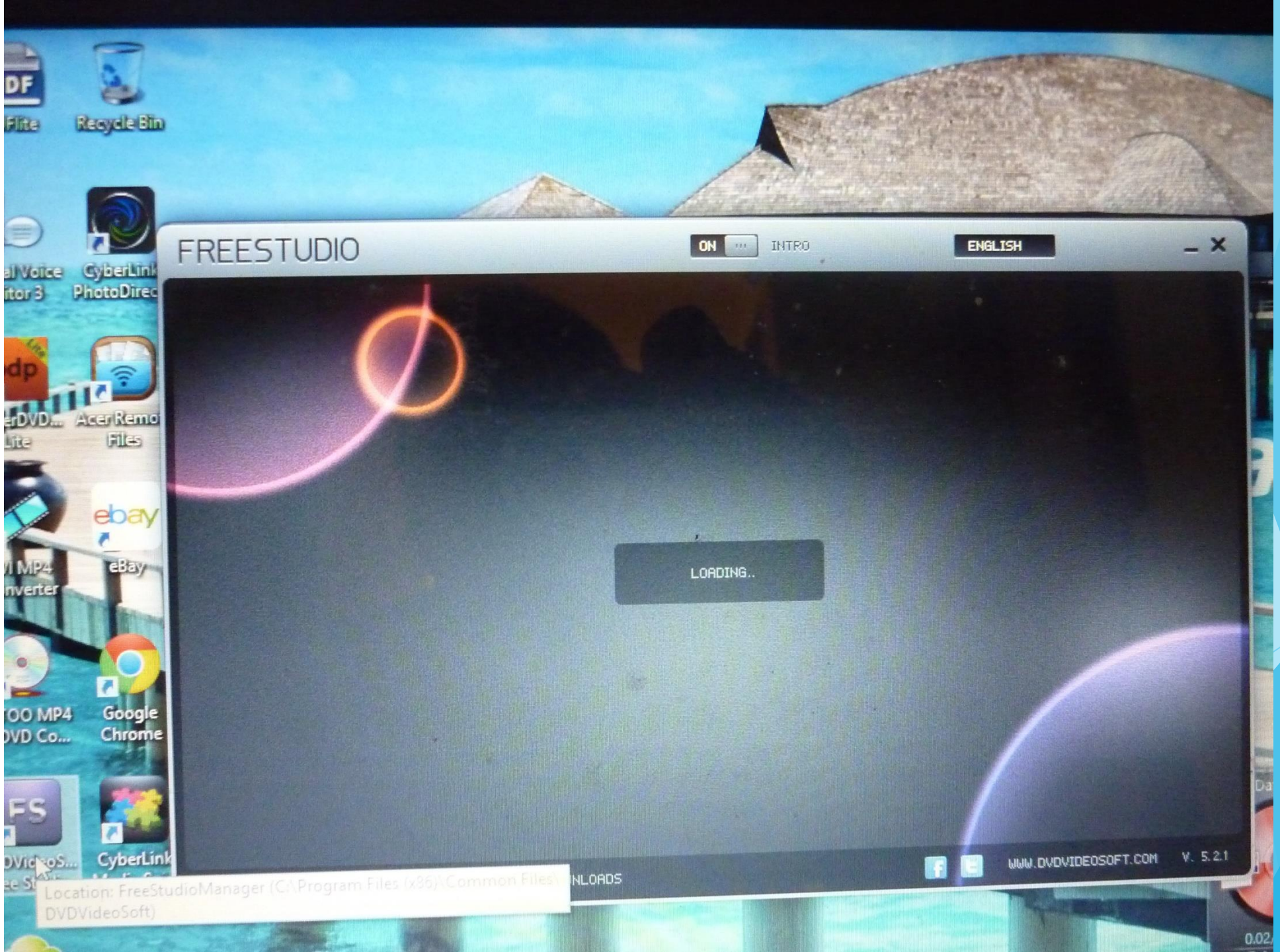
INTRO
ENGLISH
YOUTUBE
MP3 & AUDIO
CD, DVD, BD
DVD & VIDEO
PHOTO & IMAGES
MOBILES
APPLE DEVICES
3D
WWW.DVDVIDEOSOFT.COM
V. 5.2.1
Location: FreeStudioManager (C:\Program Files (x86)\Common Files\DVDVideoSoft)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WWW.DVDVIDEOSOFT.COM
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DVDVideoSoft)


PDFlite
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Digital Voice Editor 3
CyberLink PhotoDirec
PowerDVD... Lite
Acer Remo Files
AVI MP4 Converter
eBay
ImTOO MP4 to DVD Co...
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FROM DVDVIDEOSOFT
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Digital Voice Editor 3
CyberLink PhotoDirec
PowerDVD... Lite
Acer Remo Files
AVI MP4 Converter
eBay
ImTOO MP4 to DVD Co...
Google Chrome
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FREESTUDIO
FROM DVDVIDEOSOFT
WWW.DVDVIDEOSOFT.COM
Location: FreeStudioManager (C:\Program Files (x86)\Common Files\DVDVideoSoft)


FREESTUDIO
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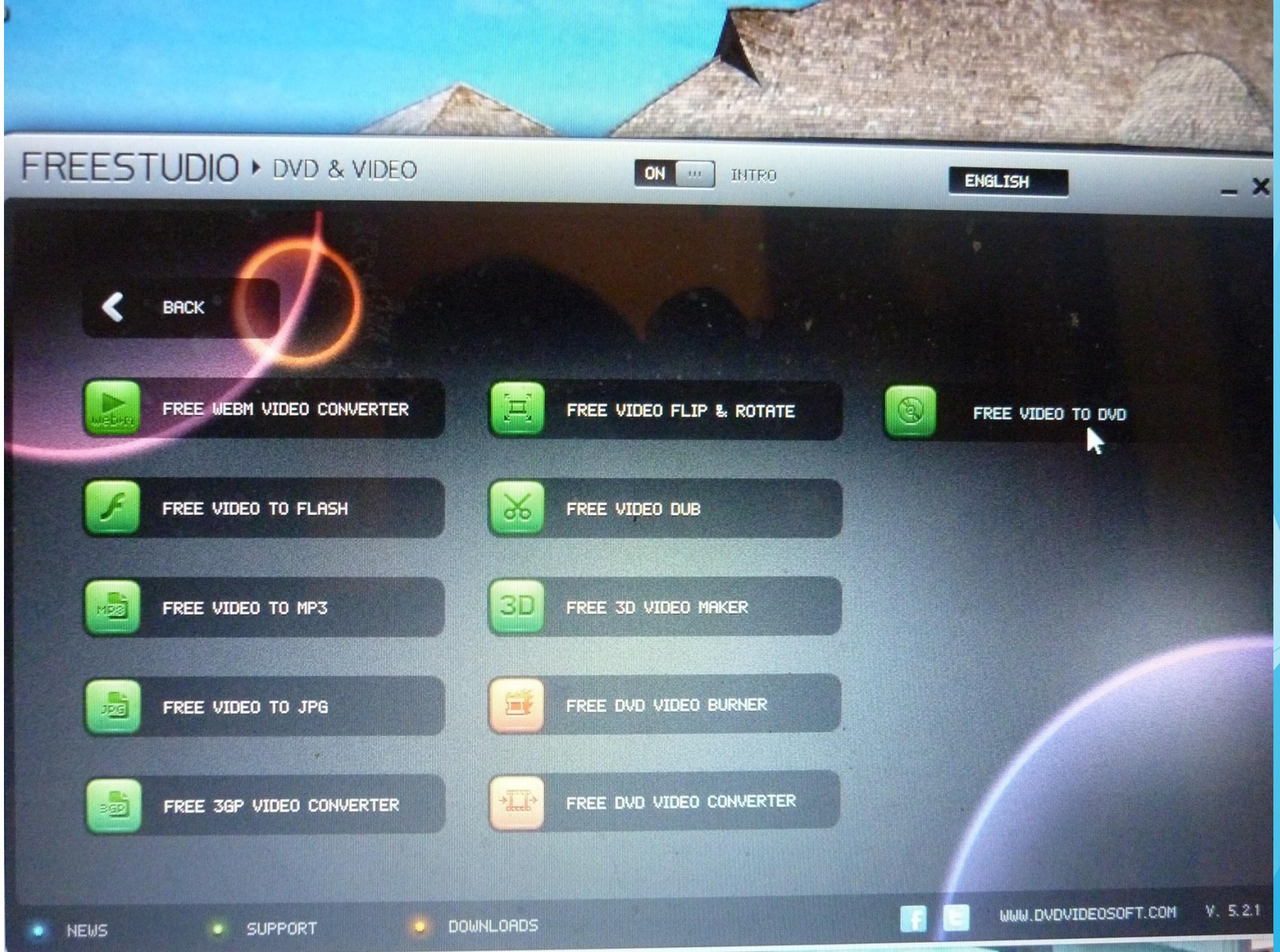
YOUTUBE
MP3 & AUDIO
CD, DVD, BD
DVD & VIDEO
PHOTO & IMAGES
MOBILES
APPLE DEVICES
3D
WWW.DVDVIDEOSOFT.COM
V. 5.2.1


ENGLISH
CD, DVD, BD


FREESTUDIO ▸ DVD & VIDEO
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FREE WEBM VIDEO CONVERTER
FREE VIDEO FLIP & ROTATE
FREE VIDEO TO DVD
FREE VIDEO TO FLASH
FREE VIDEO DUB
FREE VIDEO TO MP3
FREE 3D VIDEO MAKER
FREE VIDEO TO JPG
FREE DVD VIDEO BURNER
FREE 3GP VIDEO CONVERTER
FREE DVD VIDEO CONVERTER
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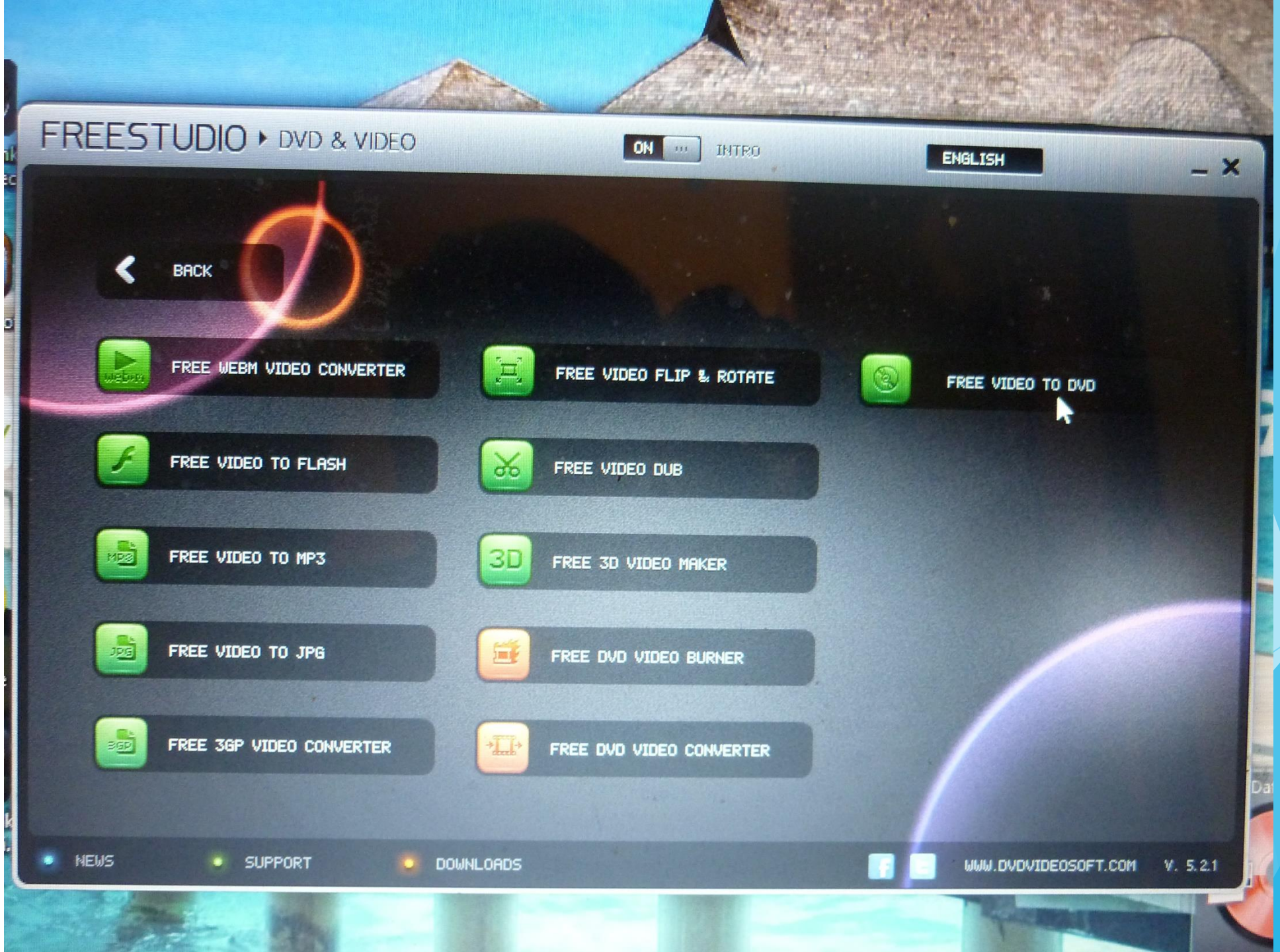
SUPPORT
DOWNLOADS
WWW.DVDVIDEOSOFT.COM
V. 5.2.1


FREESTUDIO ▸ DVD & VIDEO
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FREE VIDEO FLIP & ROTATE
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FREE VIDEO DUB
FREE VIDEO TO MP3
FREE 3D VIDEO MAKER
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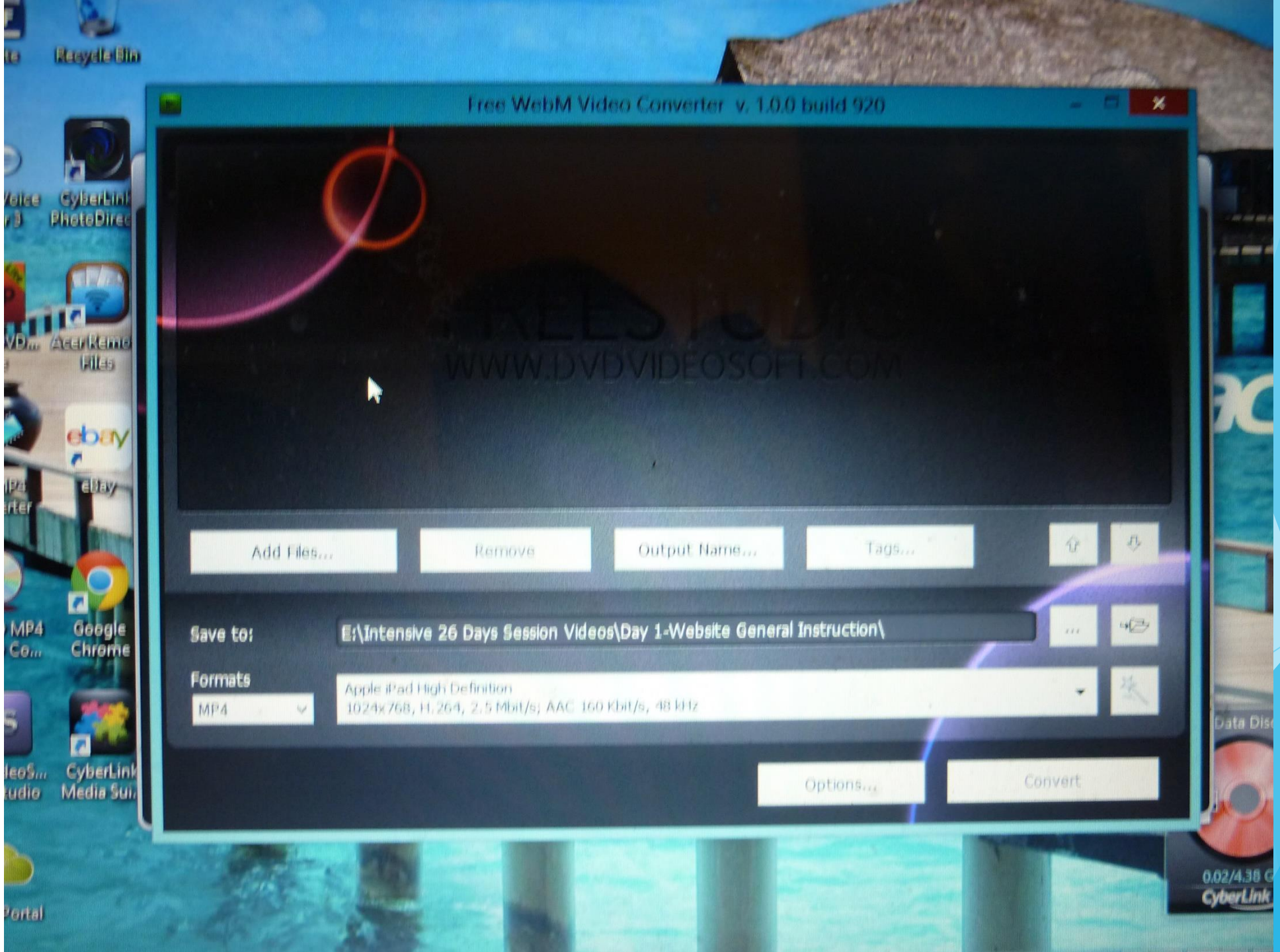
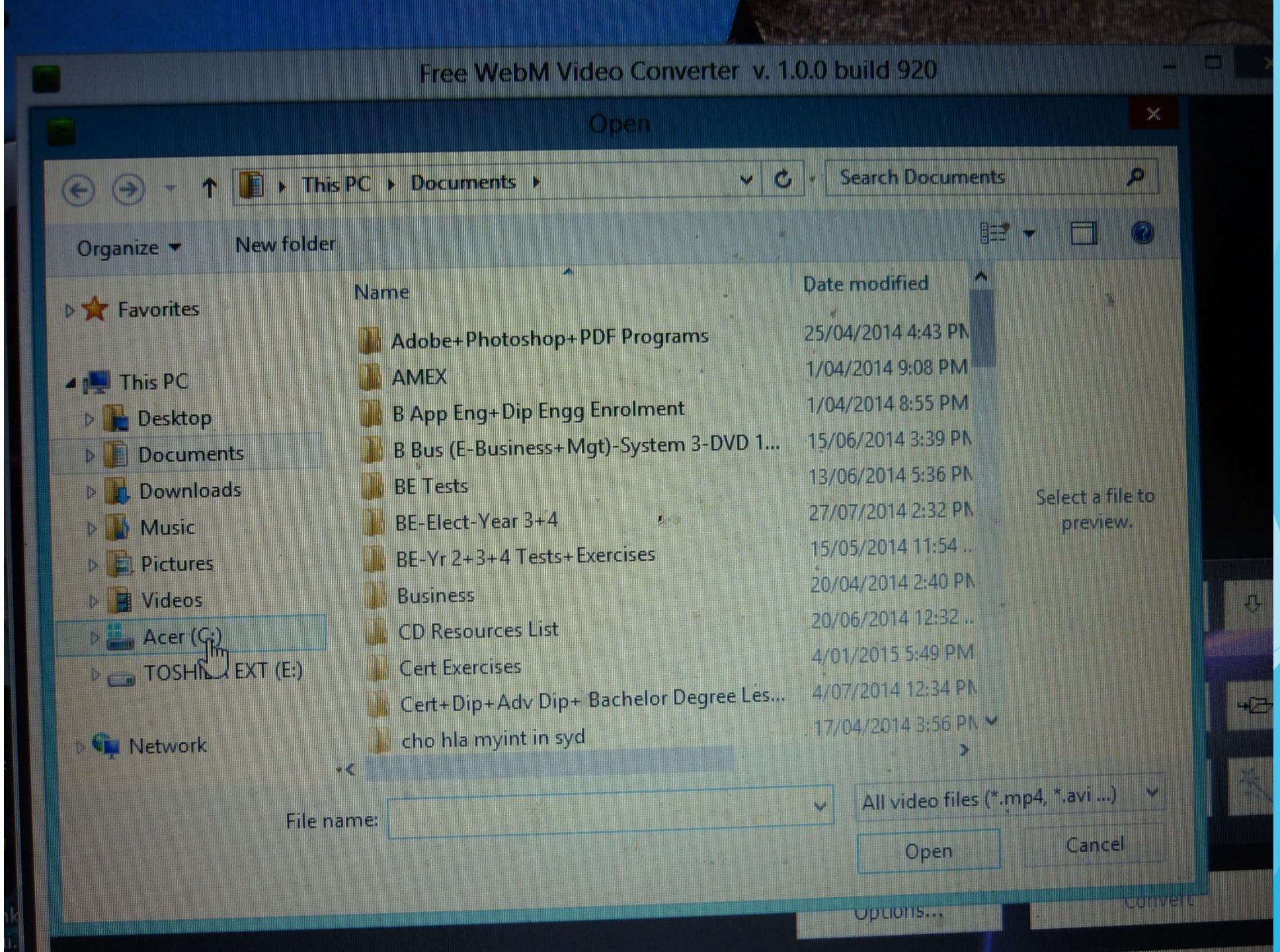

Free WebM Video Converter v. 1.0.0 build 920
WWW.DVDVIDEOSOFT.COM
Add Files...
Remove
Output Name...
Tags...
Save to:
E:\Intensive 26 Days Session Videos\Day 1-Website General Instruction\
Formats
MP4
Apple iPad High Definition
1024x768, H.264, 2.5 Mbit/s; AAC 160 Kbit/s, 48 kHz
Options...
Convert
Recycle Bin
eBay
Google Chrome


Free WebM Video Converter v. 1.0.0 build 920
Open
This PC ▸ Documents ▸
Search Documents
Organize
New folder
Favorites
This PC
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Documents
Downloads
Music
Pictures
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Adobe+Photoshop+PDF Programs 25/04/2014 4:43 PM
AMEX 1/04/2014 9:08 PM
B App Eng+Dip Engg Enrolment 1/04/2014 8:55 PM
B Bus (E-Business+Mgt)-System 3-DVD 1... 15/06/2014 3:39 PM
BE Tests 13/06/2014 5:36 PM
BE-Elect-Year 3+4 27/07/2014 2:32 PM
BE-Yr 2+3+4 Tests+Exercises 15/05/2014 11:54 ...
Business 20/04/2014 2:40 PM
CD Resources List 20/06/2014 12:32 ...
Cert Exercises 4/01/2015 5:49 PM
Cert+Dip+Adv Dip+ Bachelor Degree Les... 4/07/2014 12:34 PM
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All video files (*.mp4, *.avi ...)
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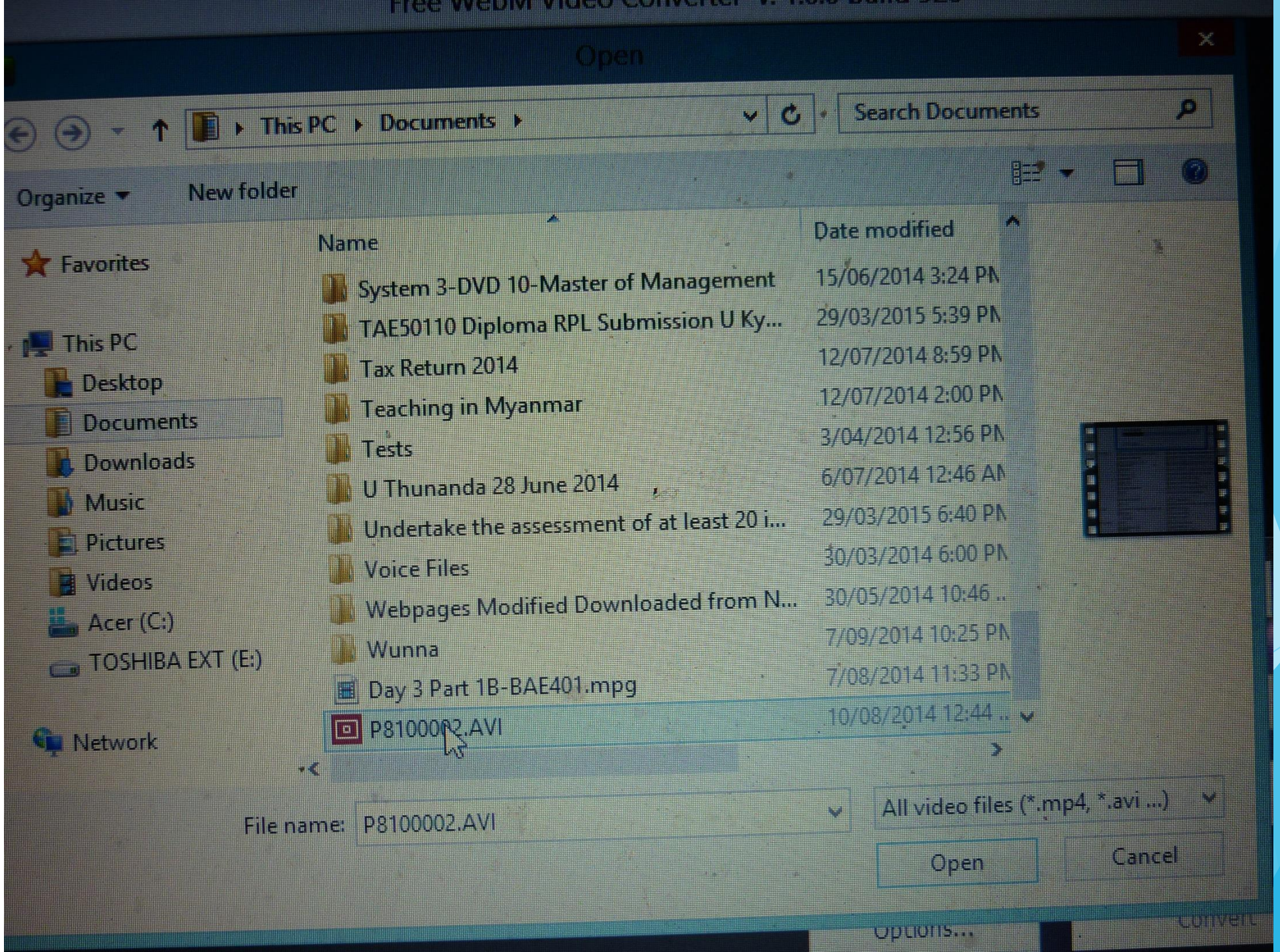
Open
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29/03/2015 5:39 PM
Tax Return 2014
12/07/2014 8:59 PM
Teaching in Myanmar
12/07/2014 2:00 PM
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3/04/2014 12:56 PM
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6/07/2014 12:46 AM
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Wunna
7/09/2014 10:25 PM
Day 3 Part 1B-BAE401.mpg
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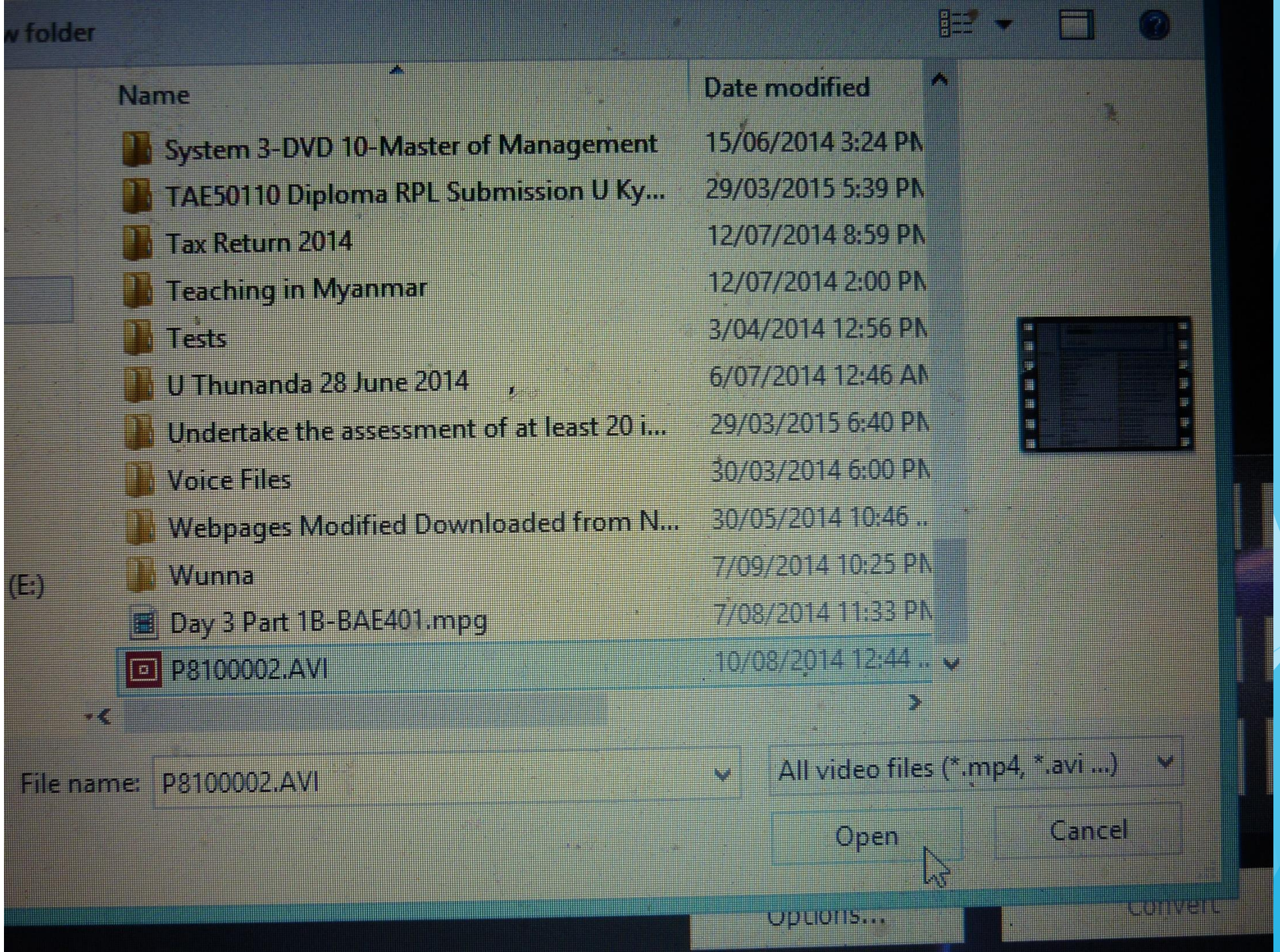
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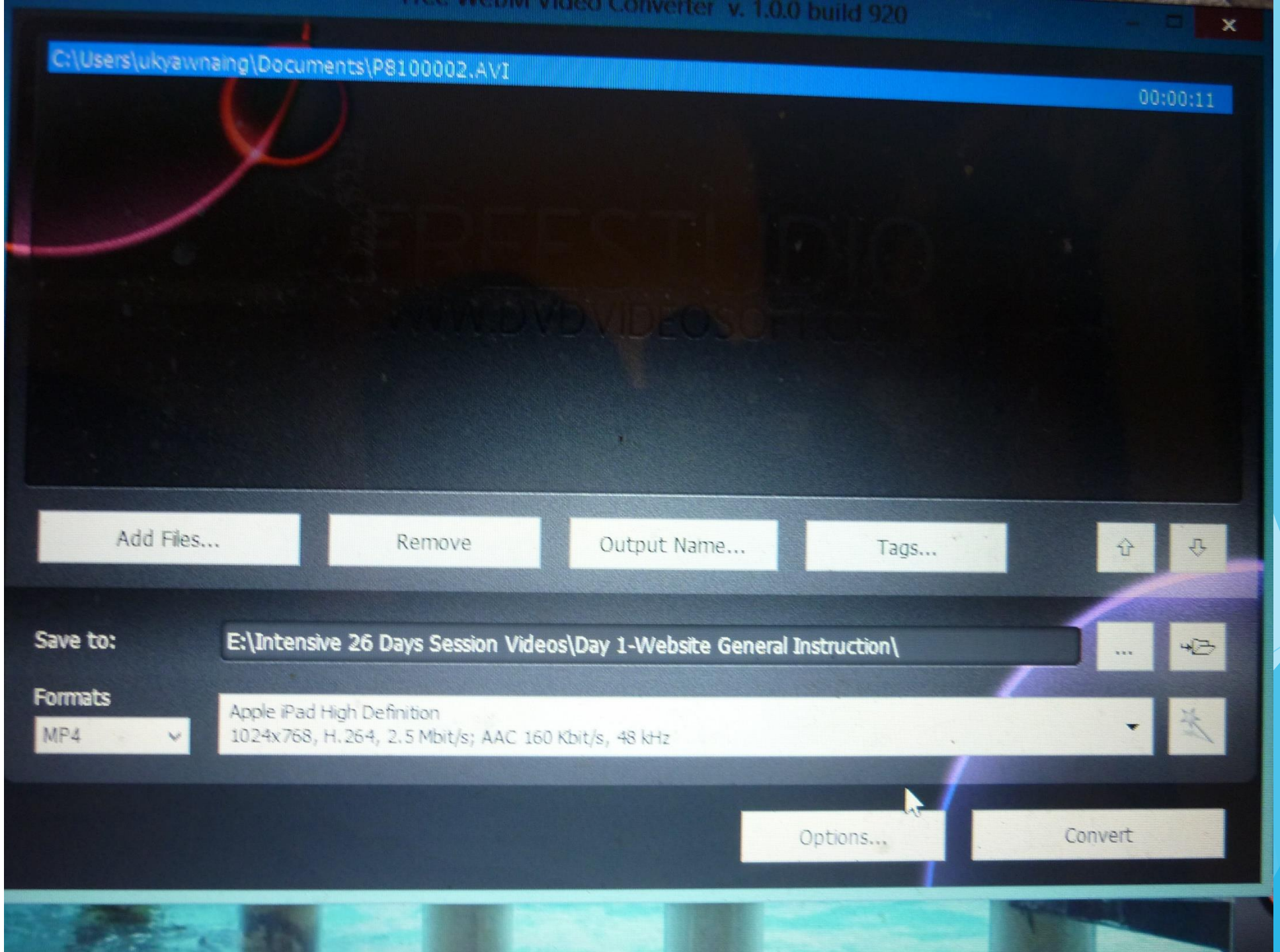
Free WebM Video Converter v. 1.0.0 build 920
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Add Files...
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Output Name...
Tags...
Save to:
E:\Intensive 26 Days Session Videos\Day 1-Website General Instruction\
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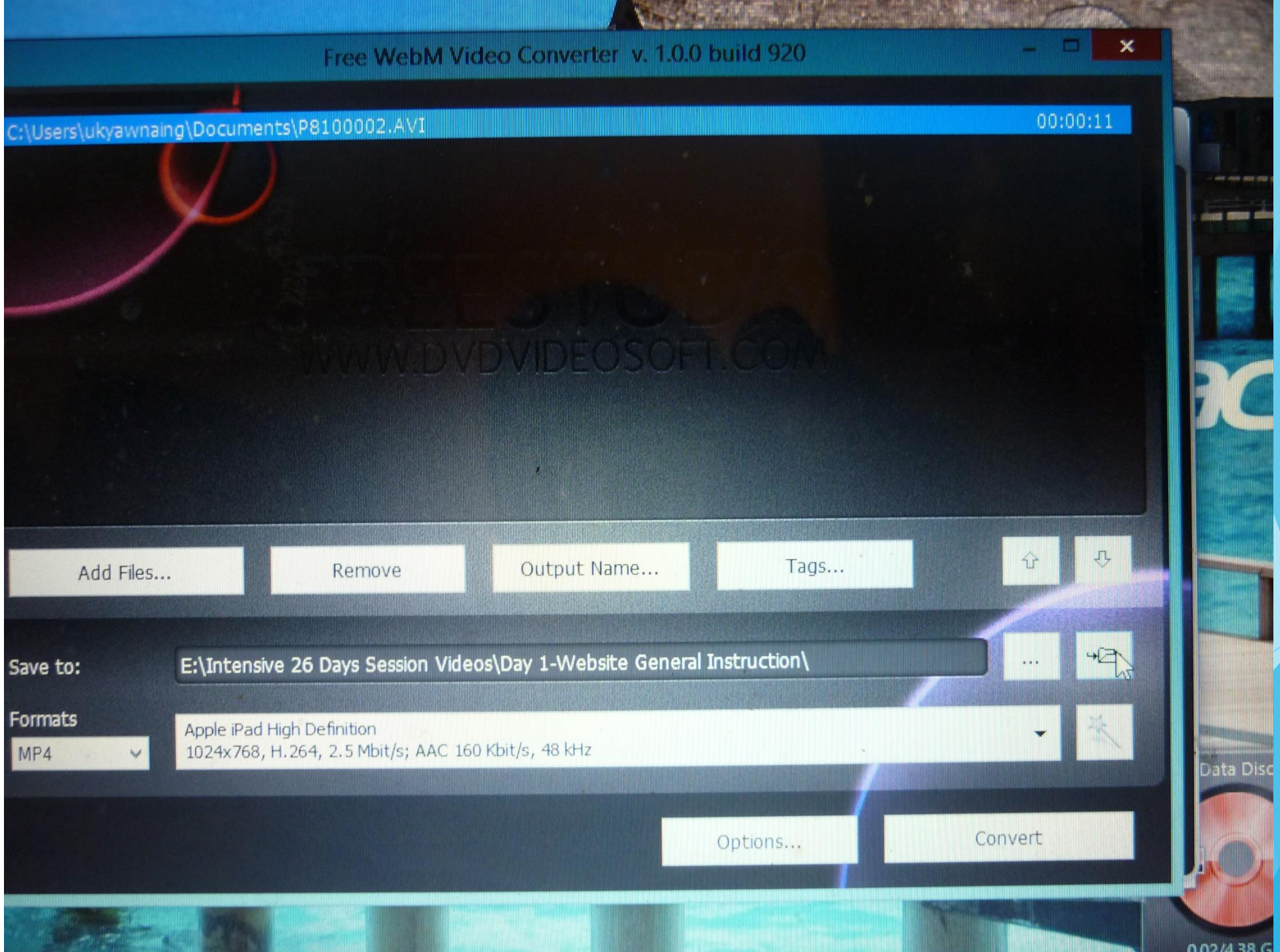
Formats
MP4
Apple iPad High Definition
1024x768, H.264, 2.5 Mbit/s; AAC 160 Kbit/s, 48 kHz
Options...
Convert


Free WebM Video Converter v. 1.0.0 build 920
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00:00:11
WWW.DVDVIDEOSOFT.COM
Add Files...
Remove
Output Name...
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Save to:
E:\Intensive 26 Days Session Videos\Day 1-Website General Instruction\
Formats
MP4
Apple iPad High Definition
1024x768, H.264, 2.5 Mbit/s; AAC 160 Kbit/s, 48 kHz
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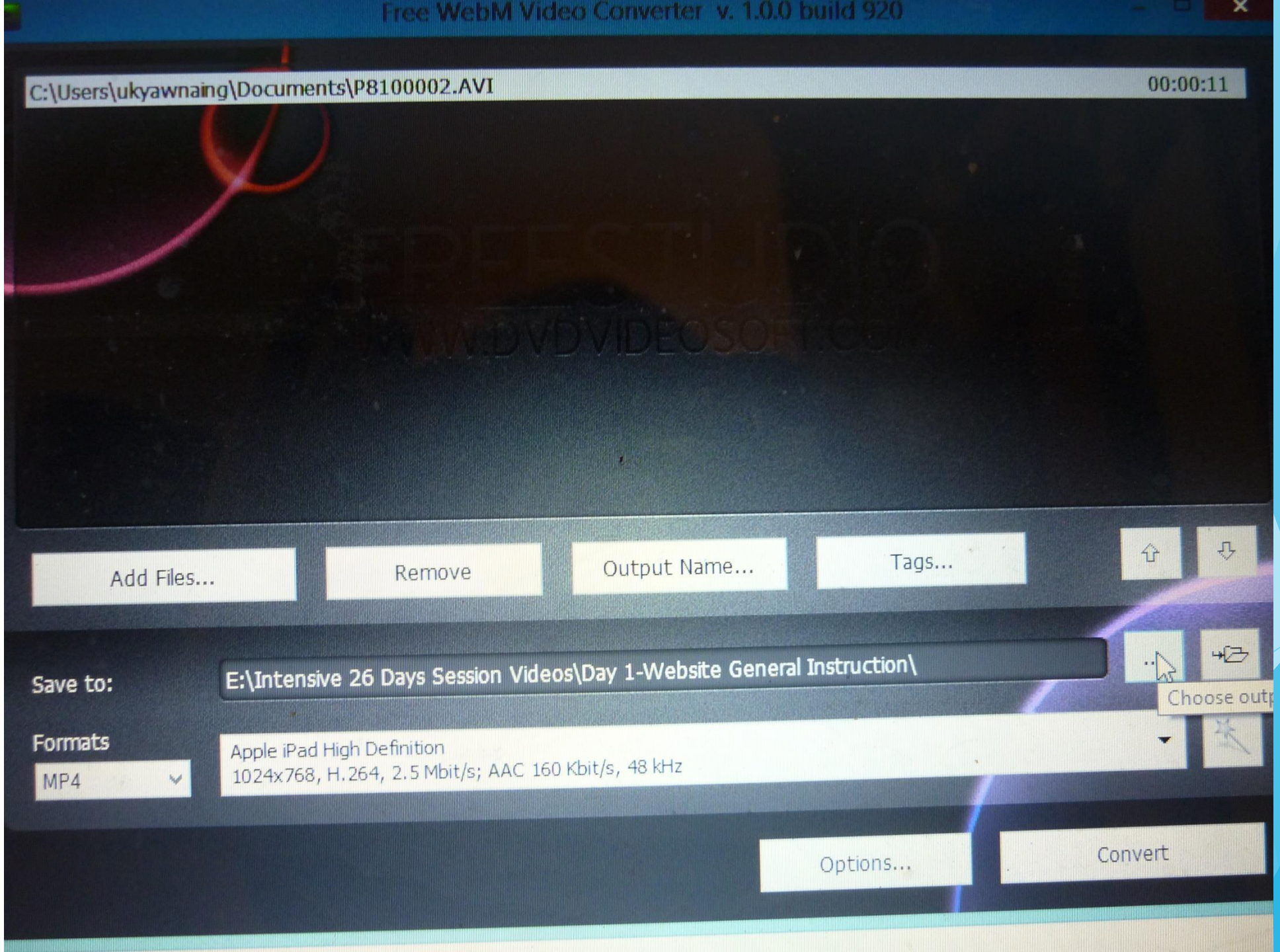
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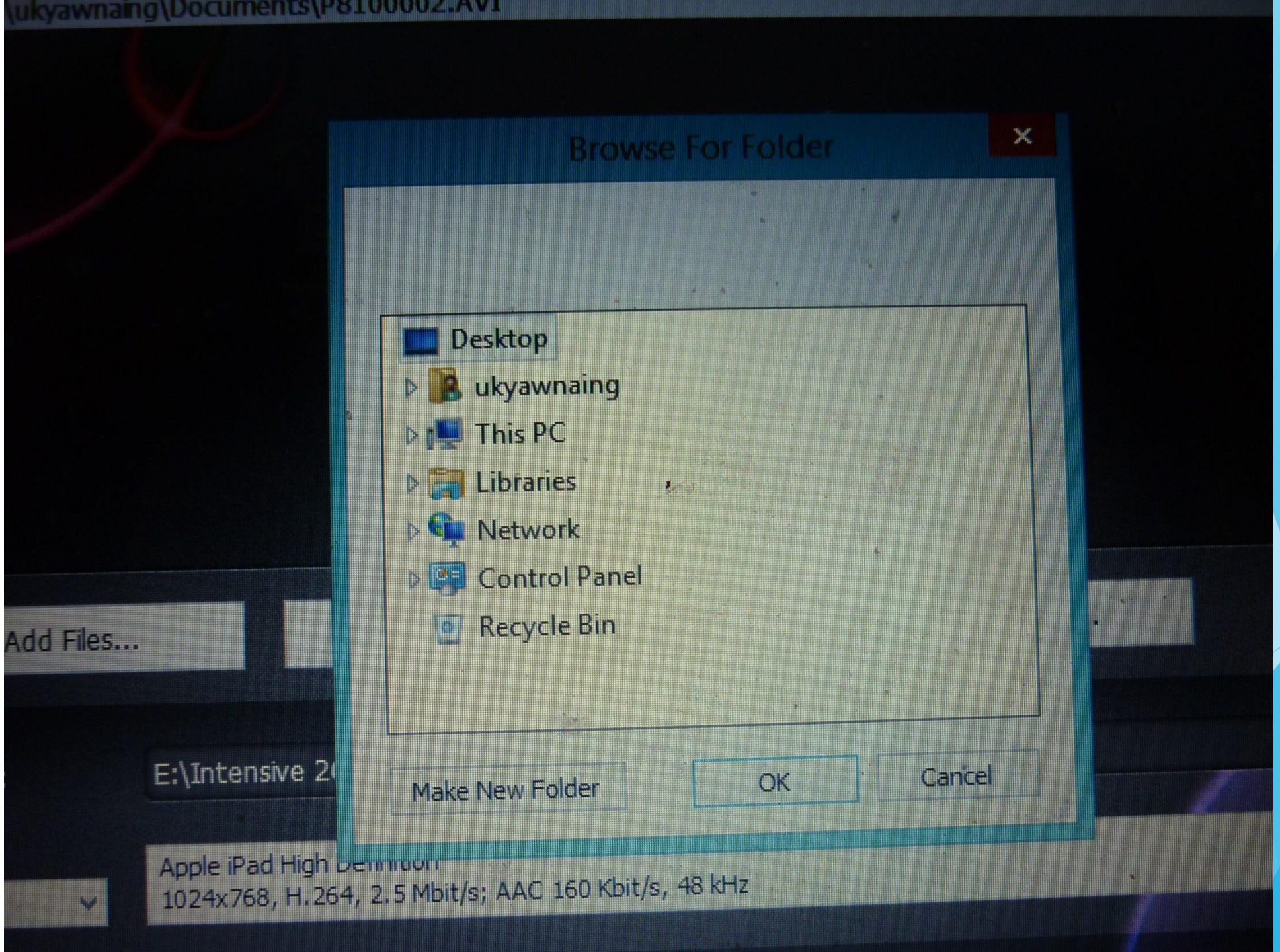
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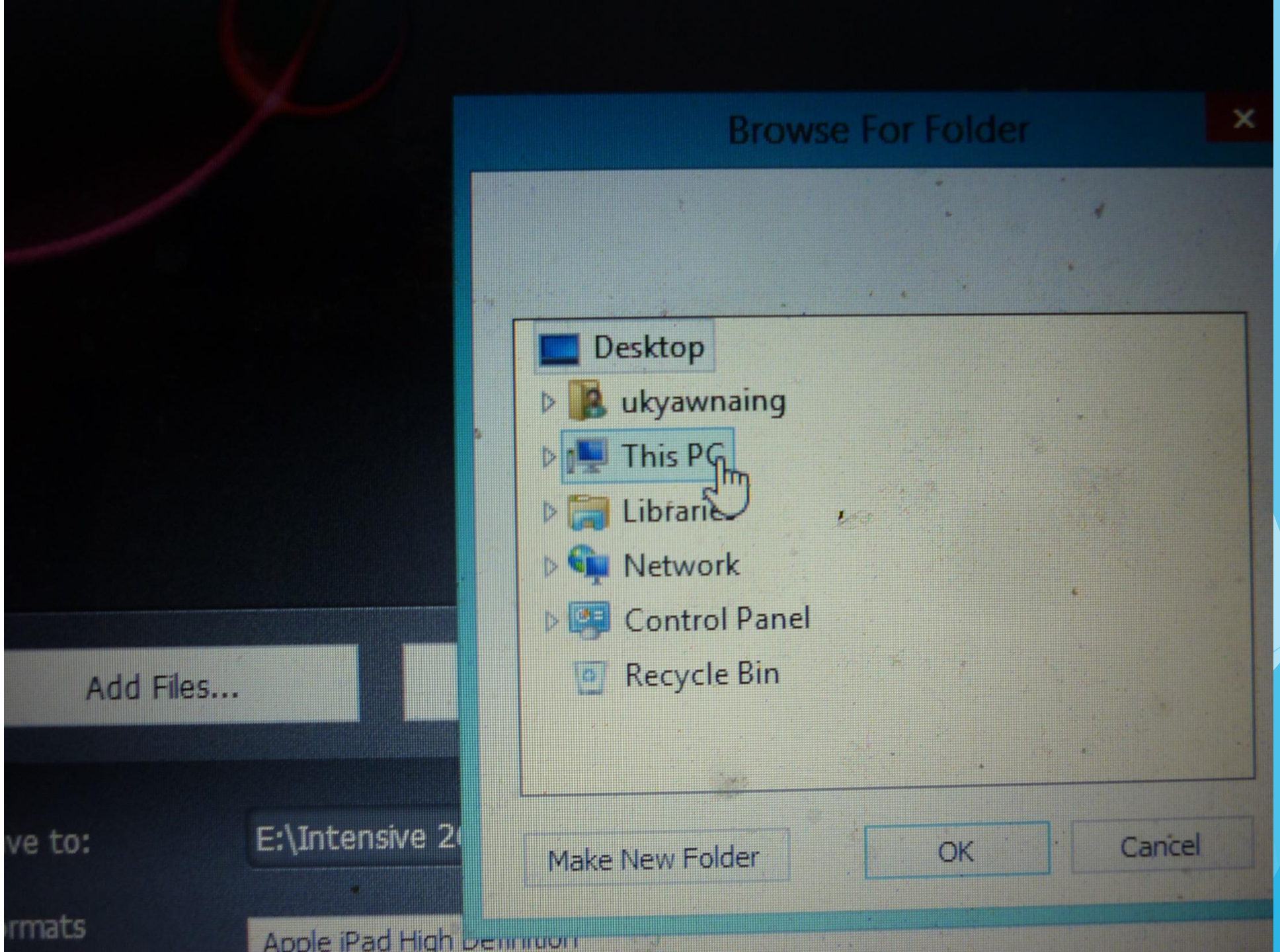
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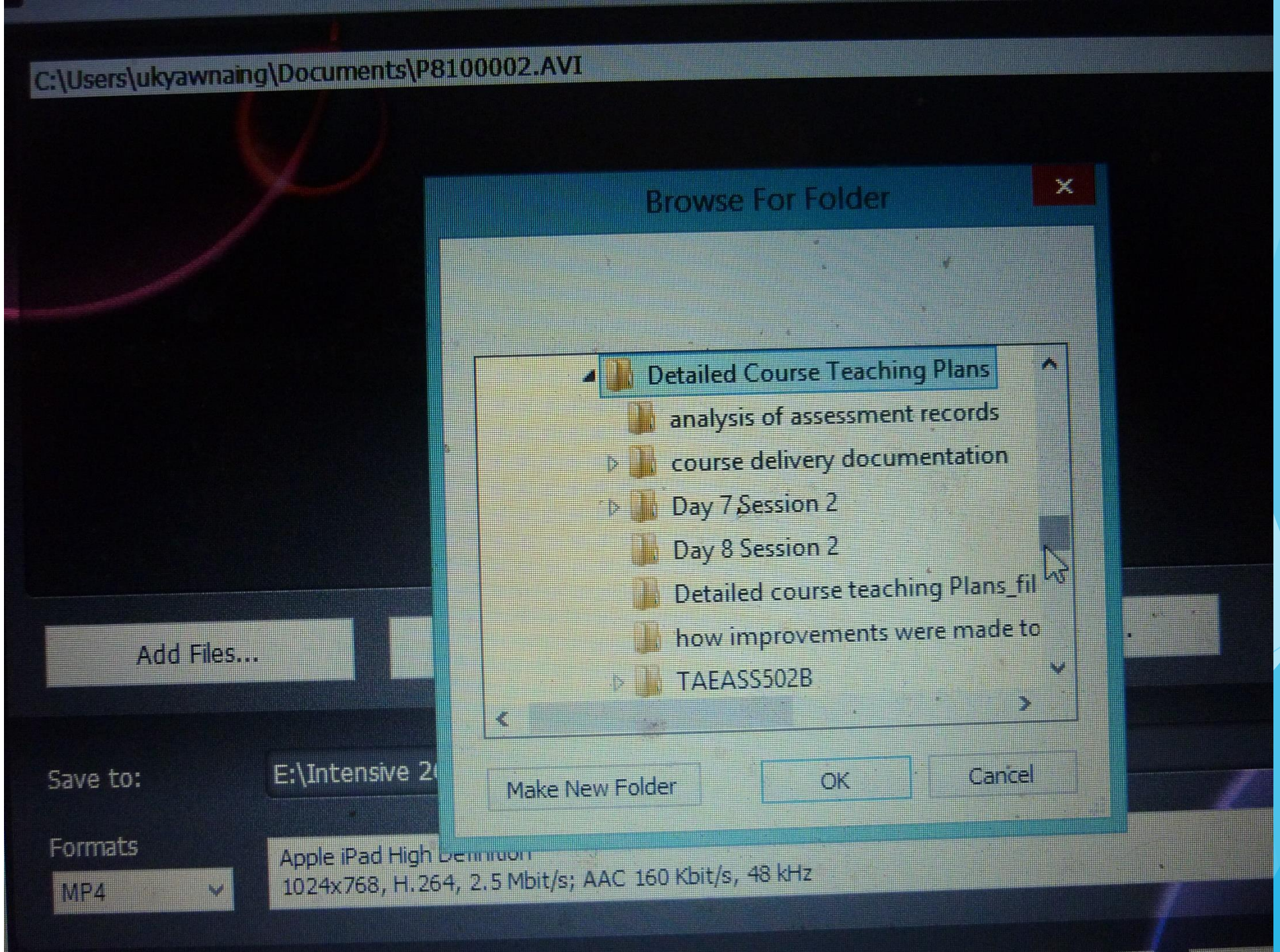
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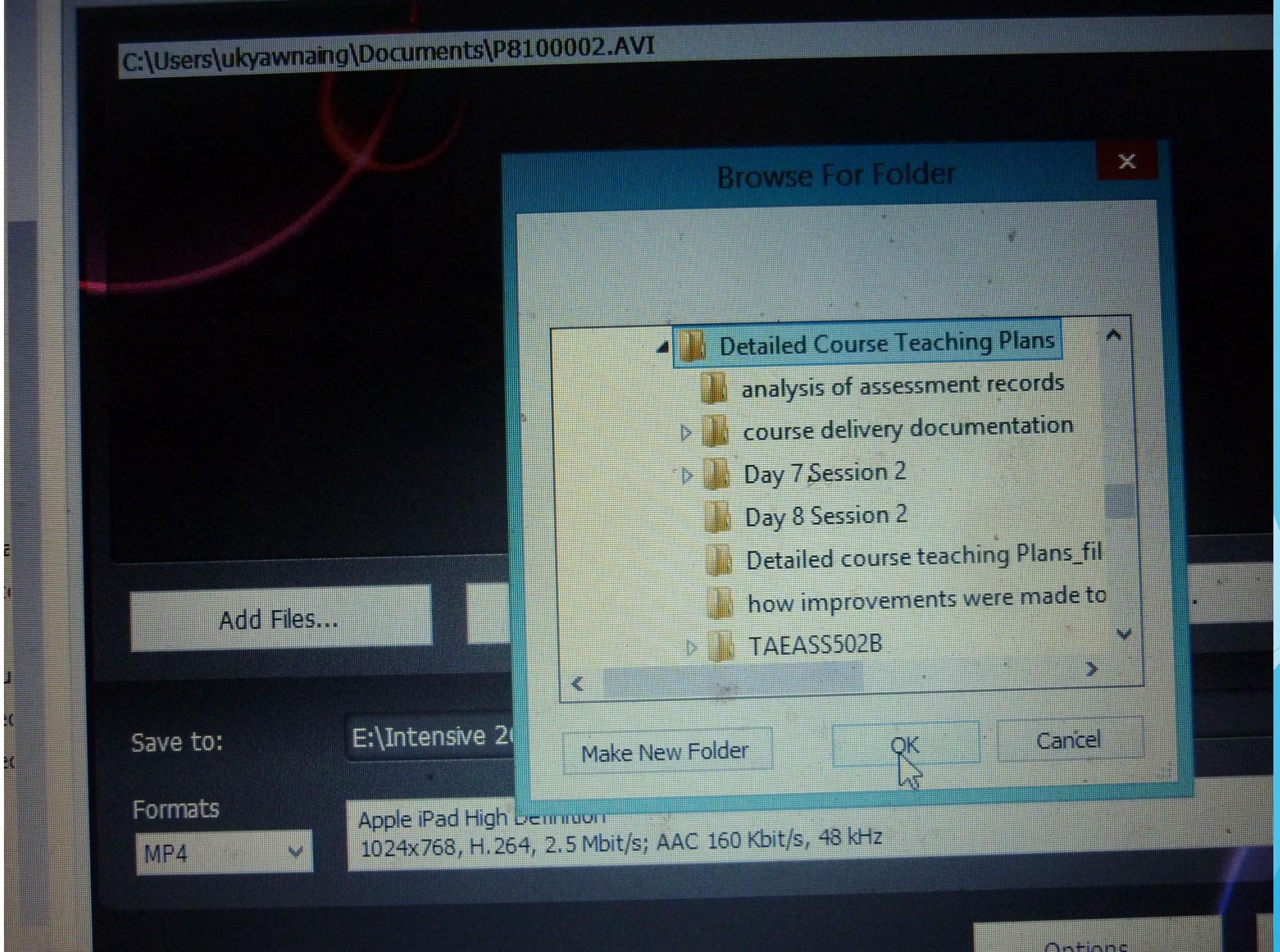
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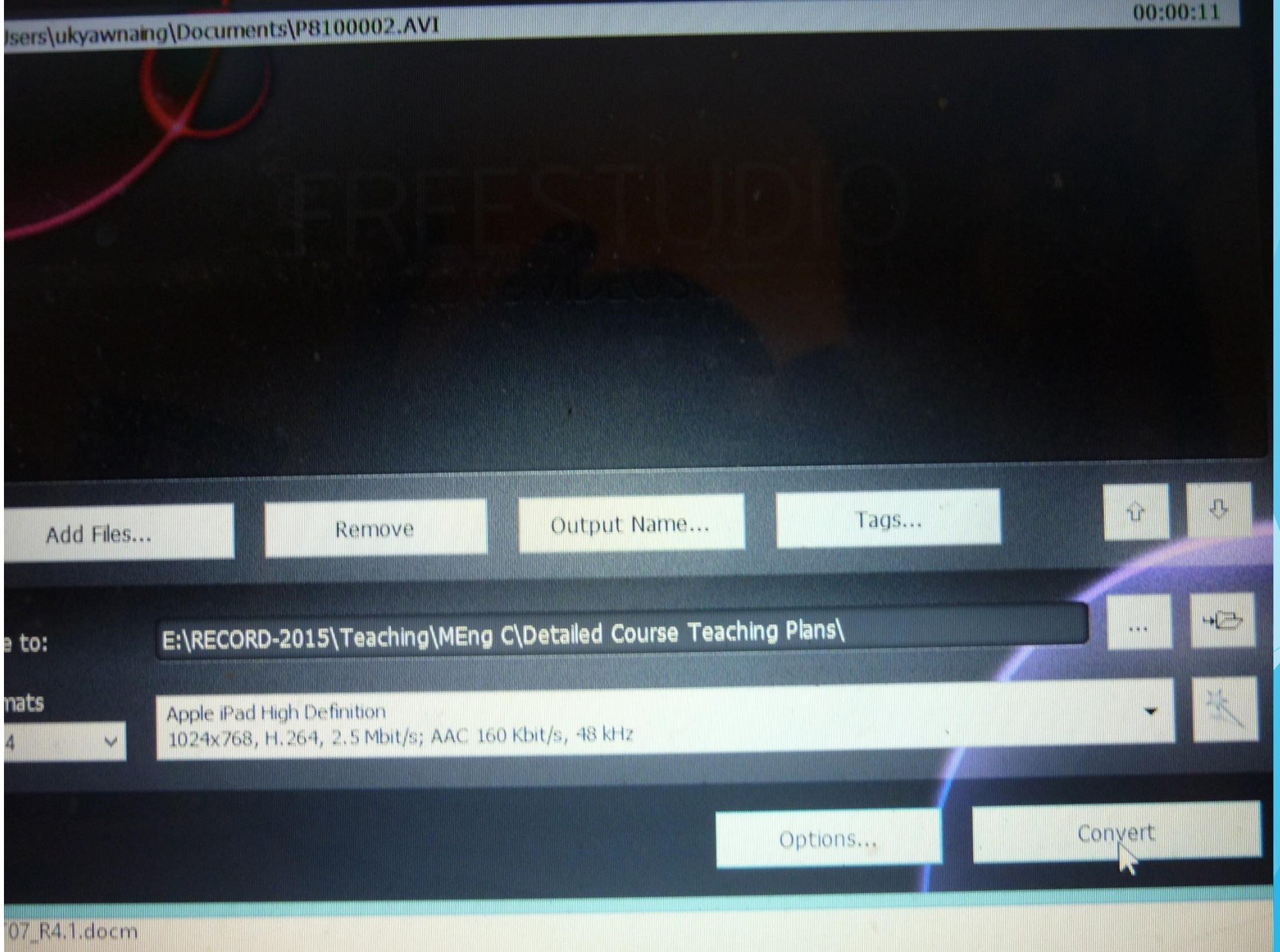
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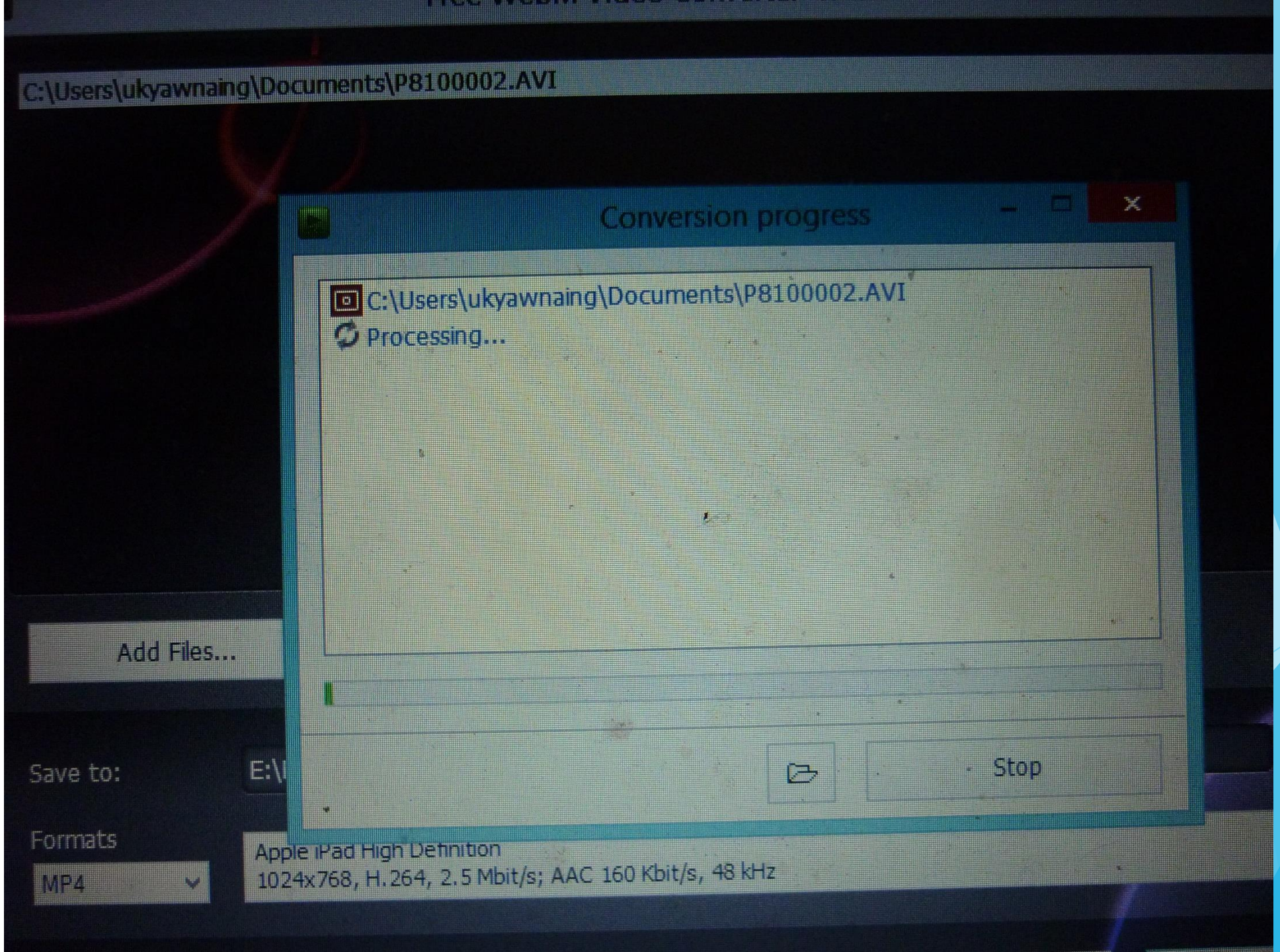
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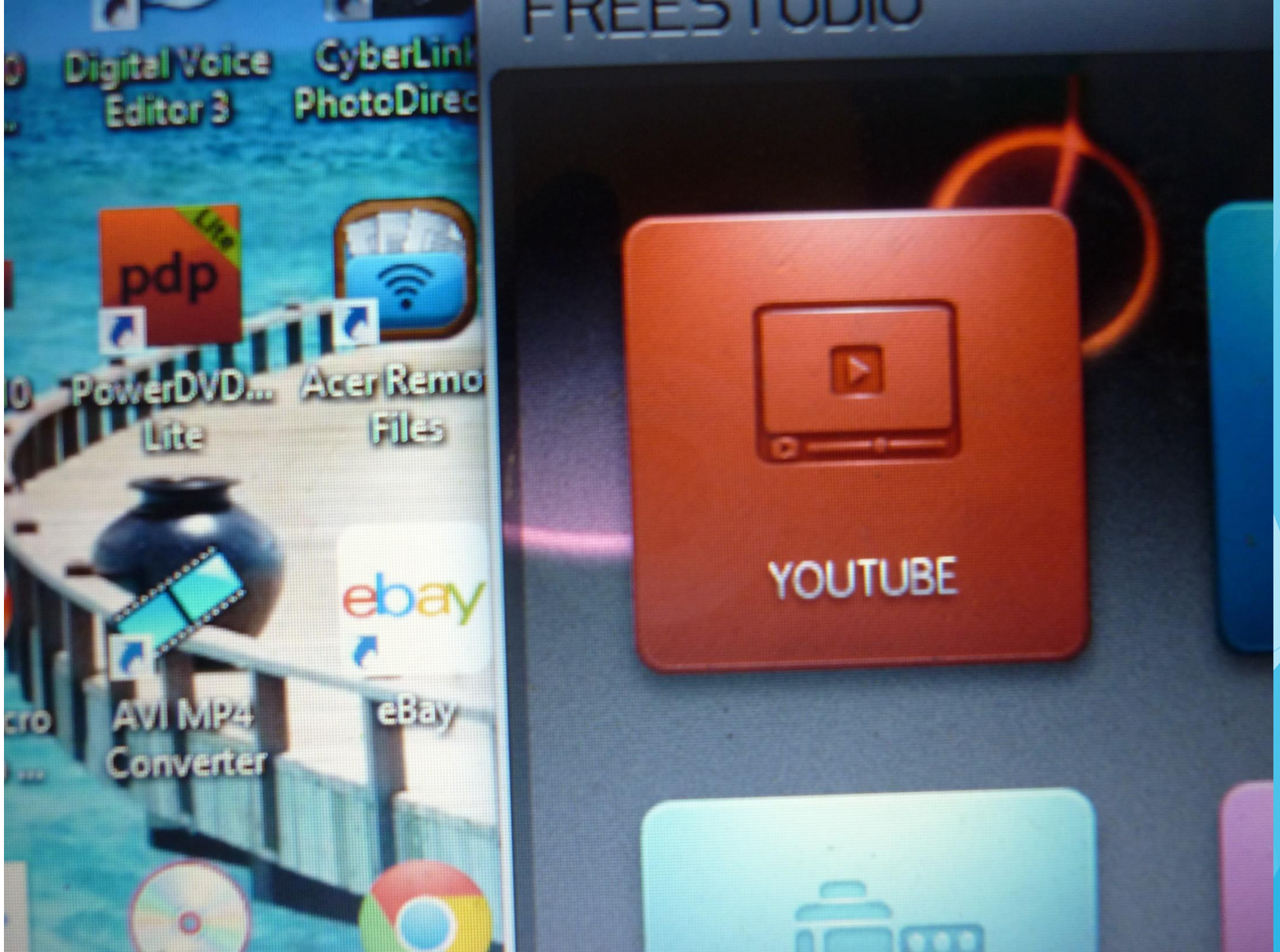
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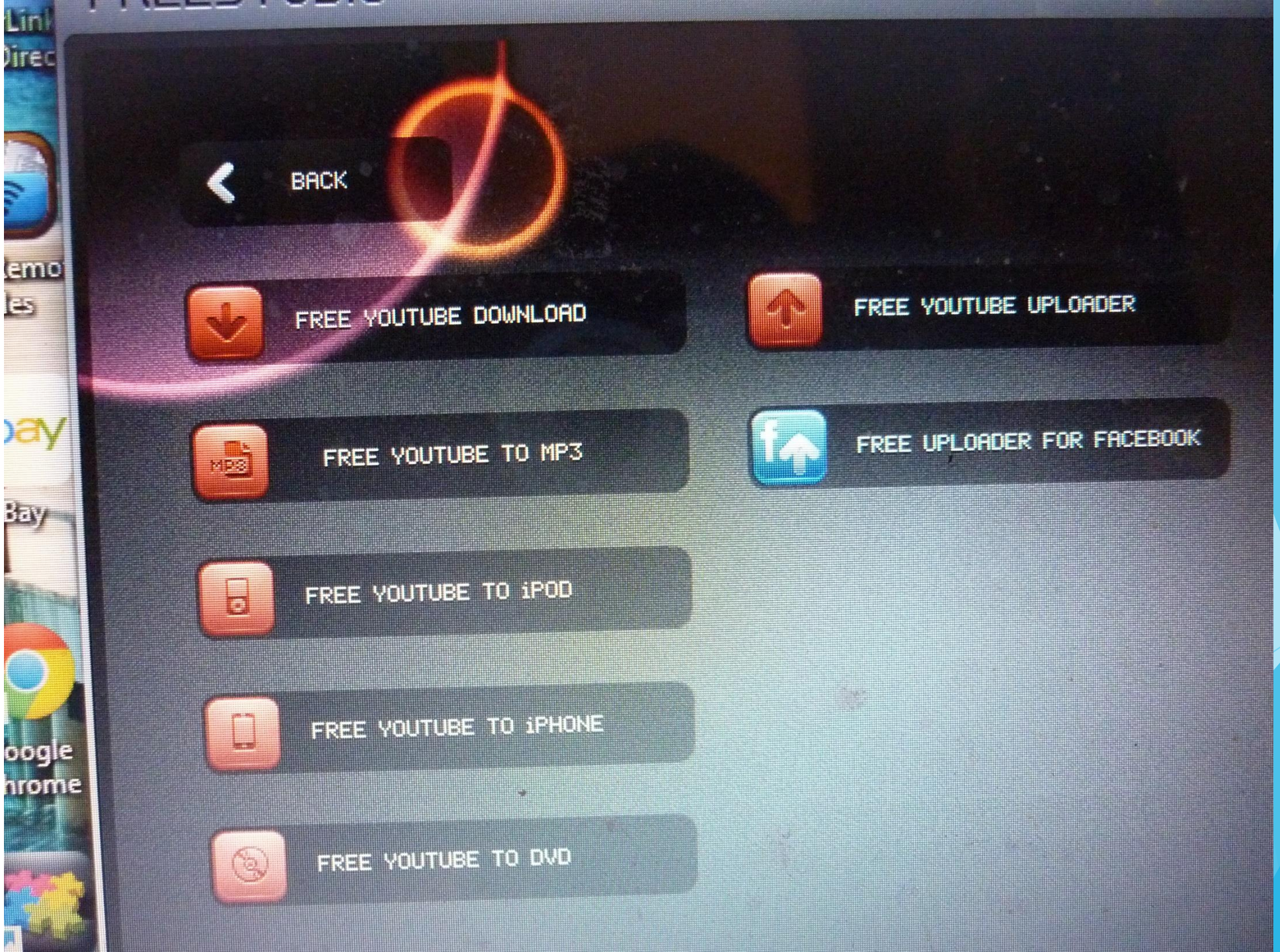
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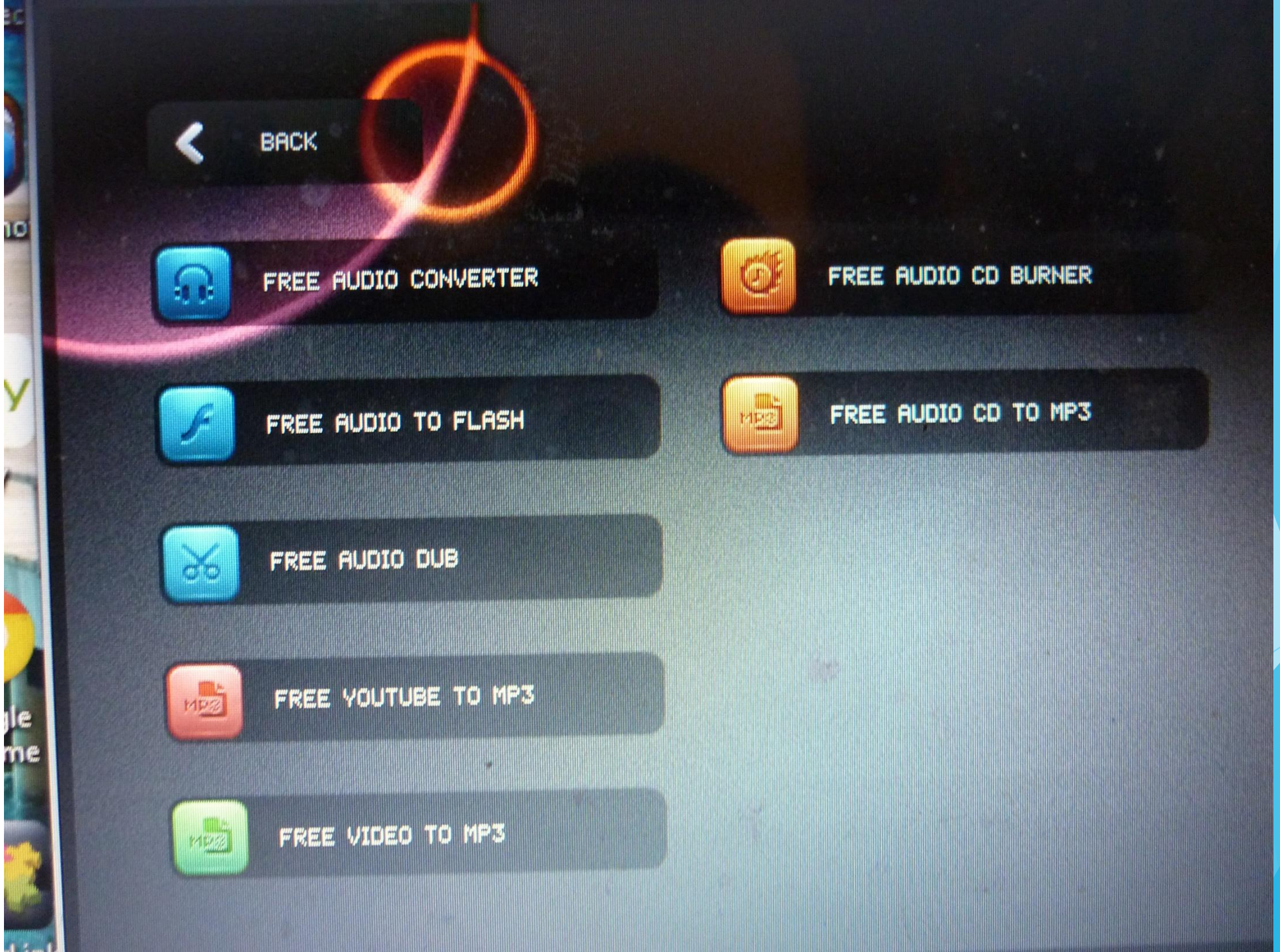
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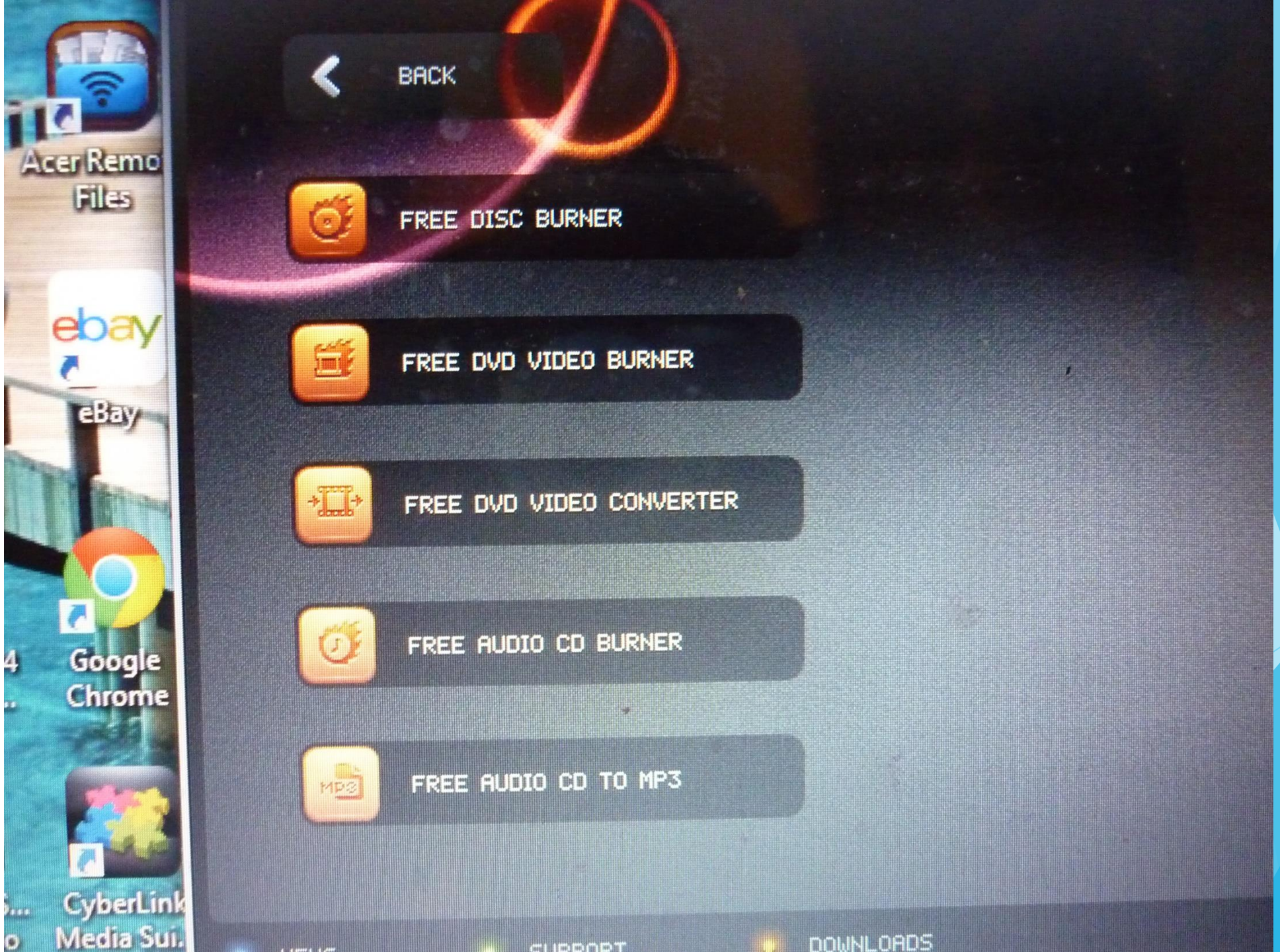
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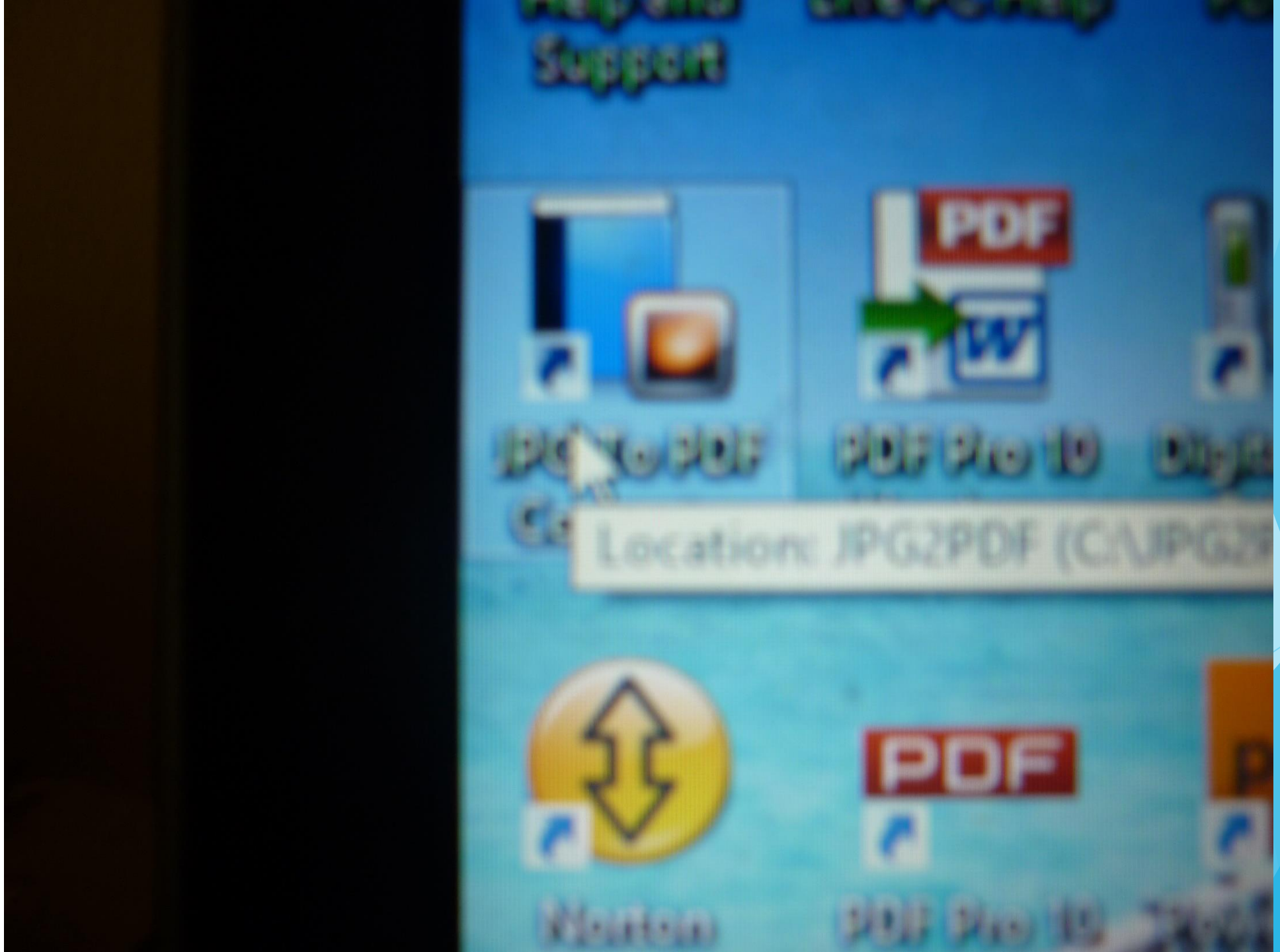
Advantages

Long term record / Easy to refer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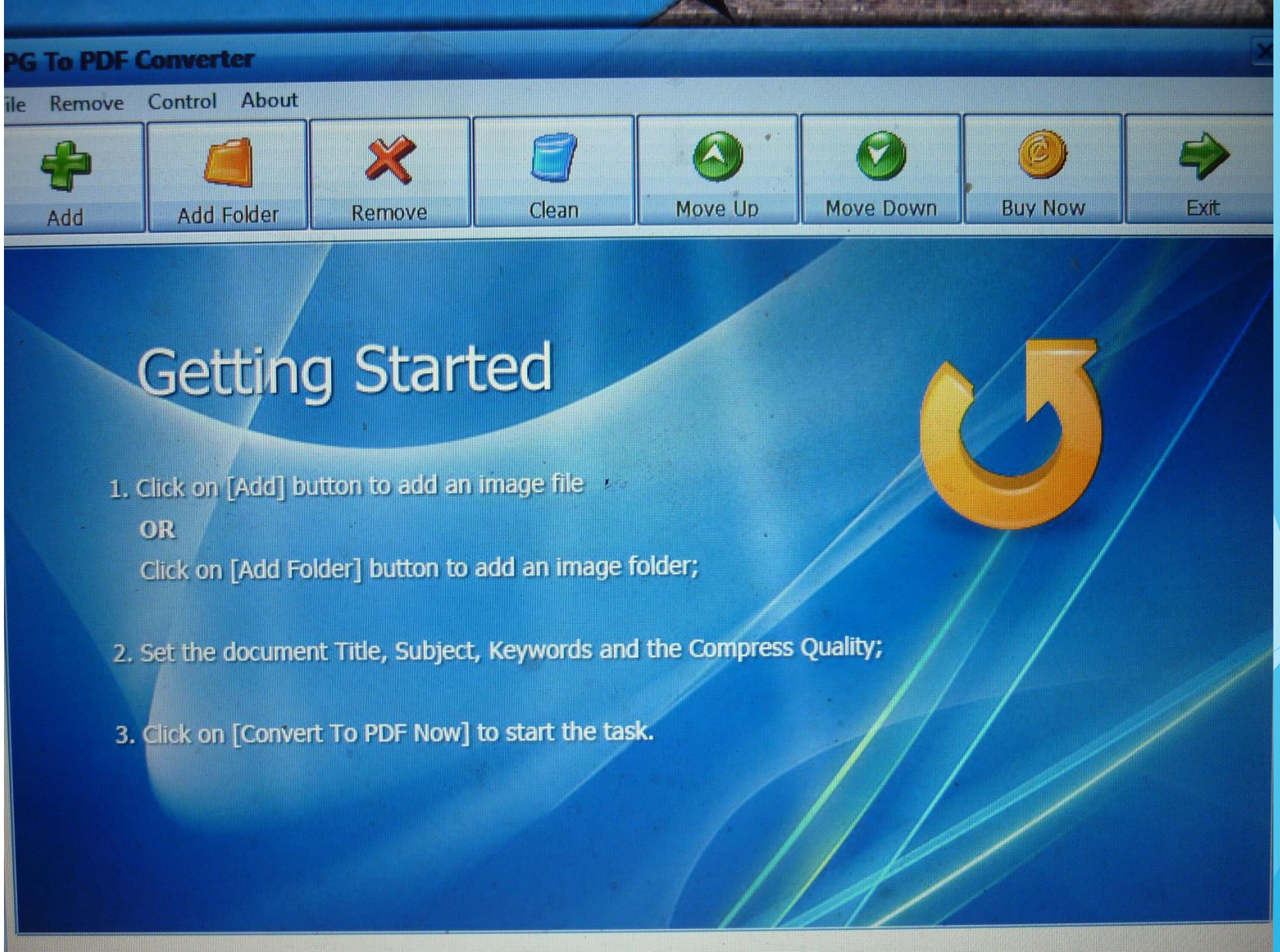
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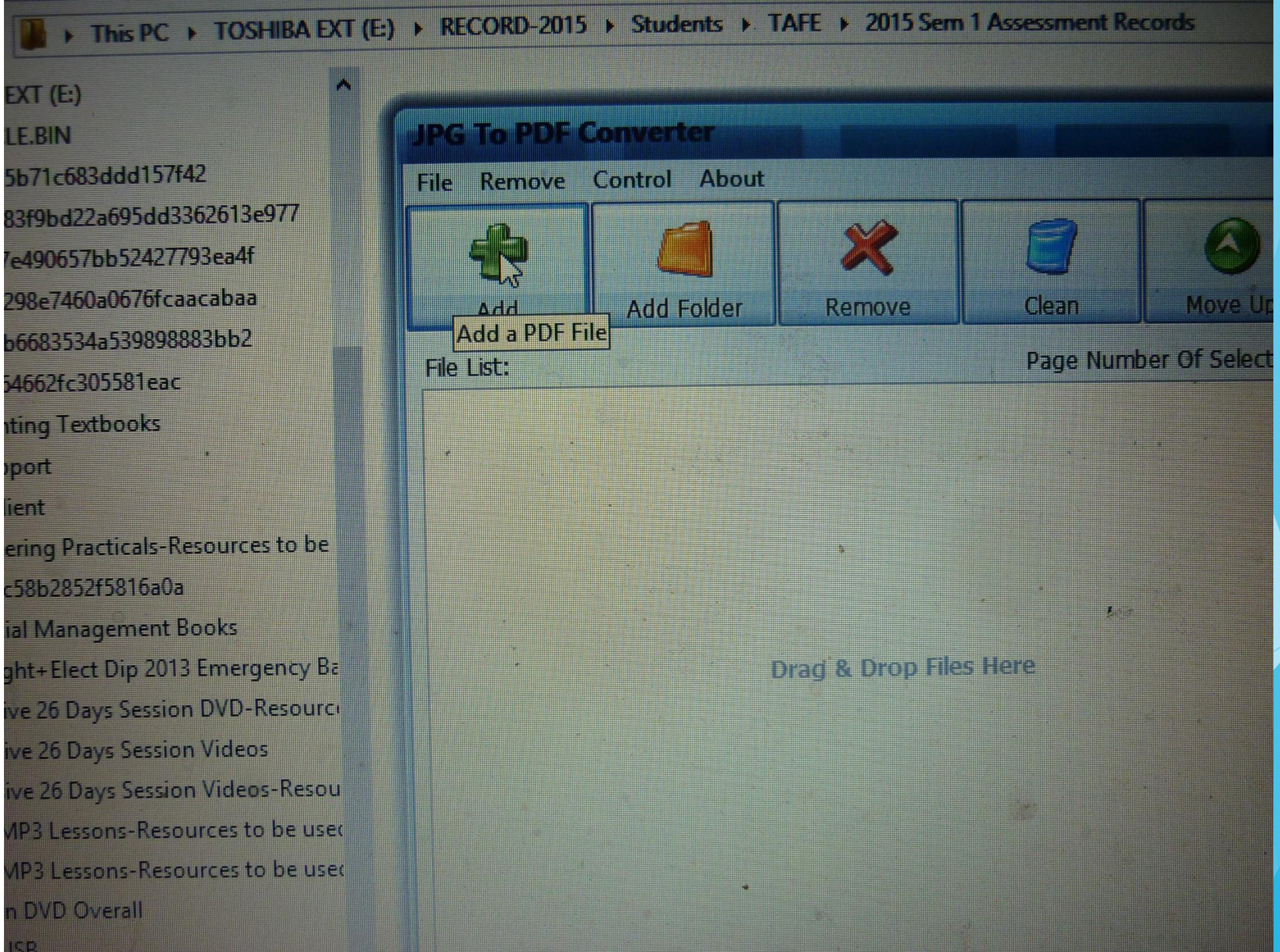
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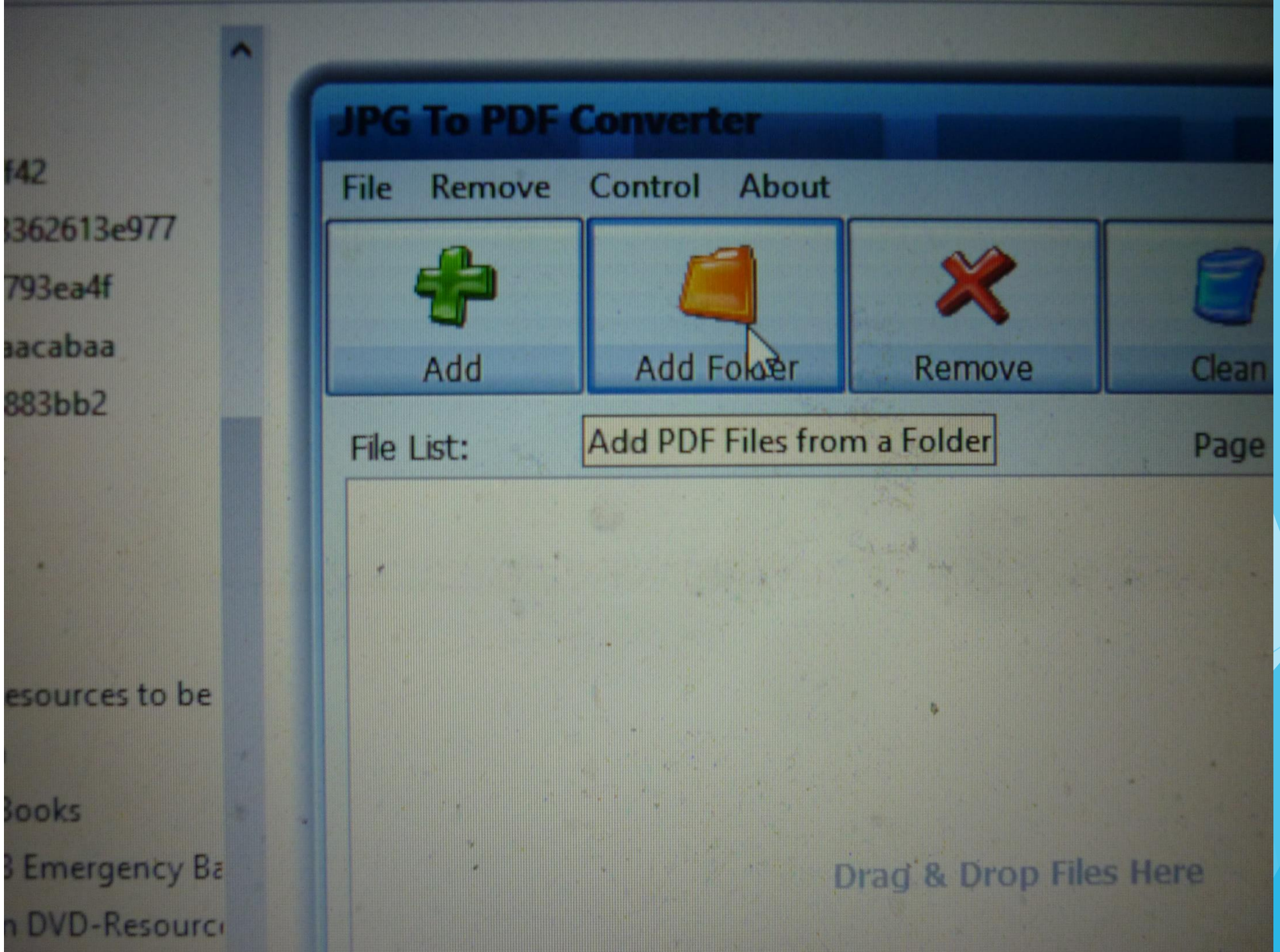
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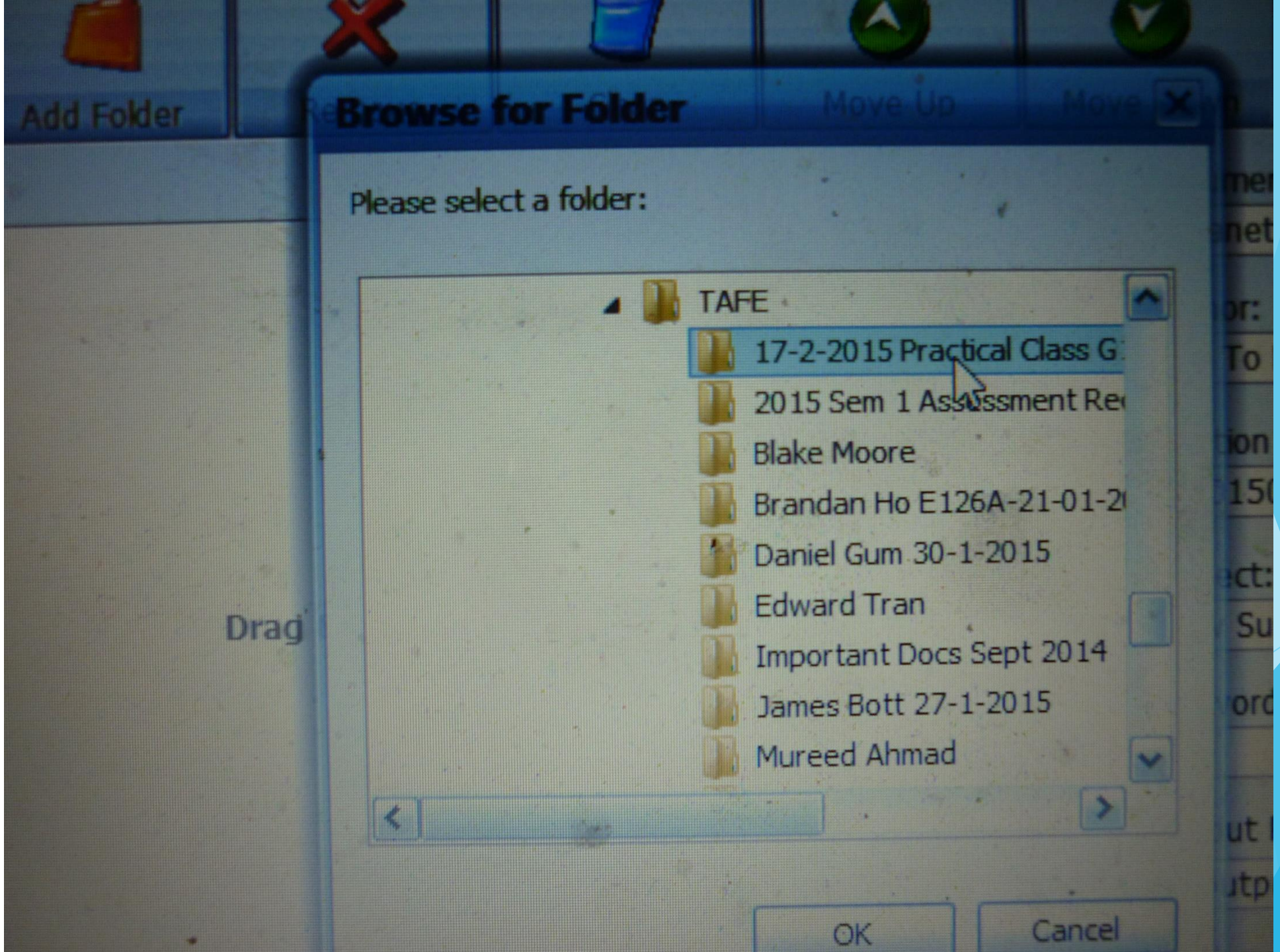
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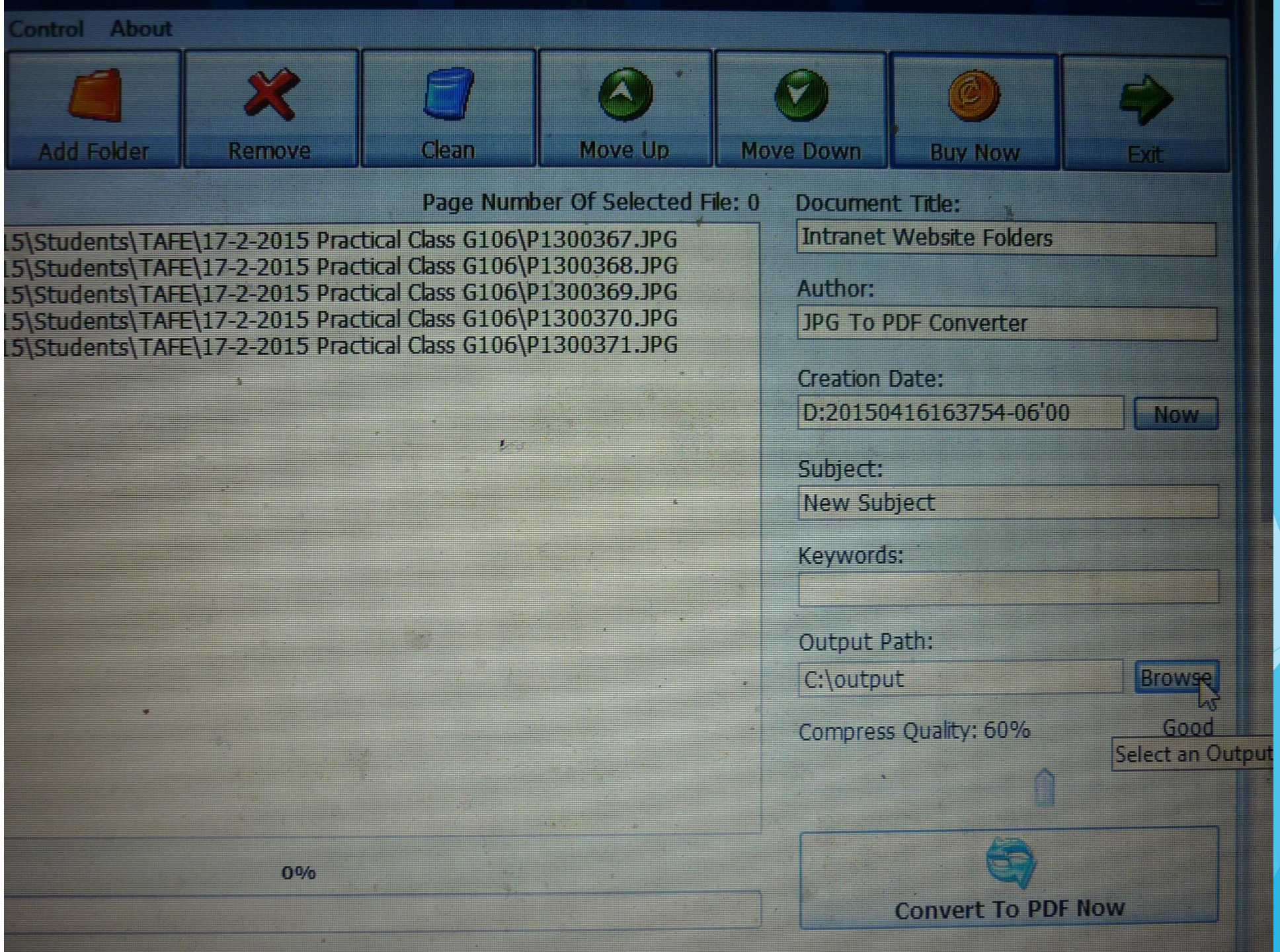
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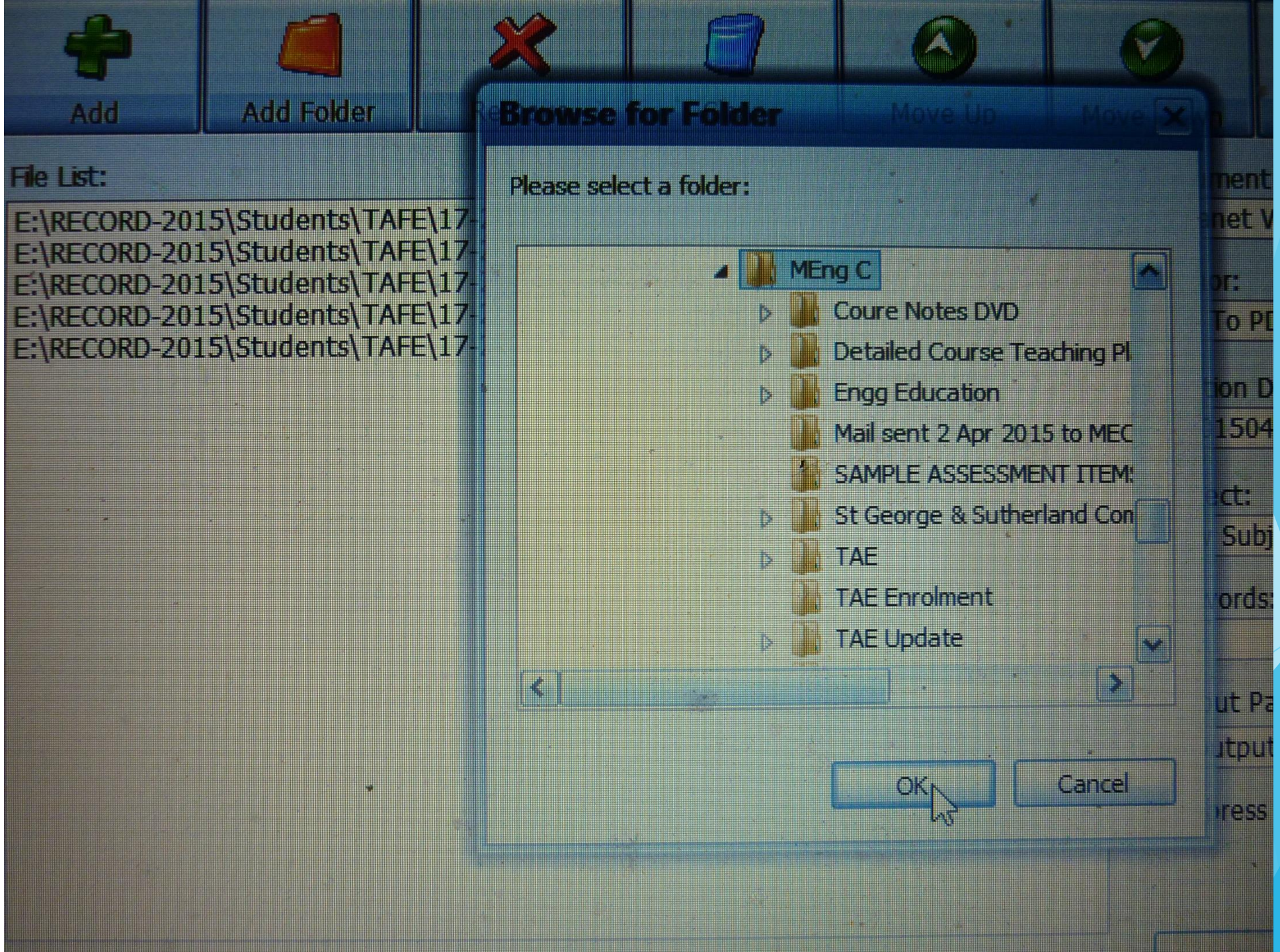
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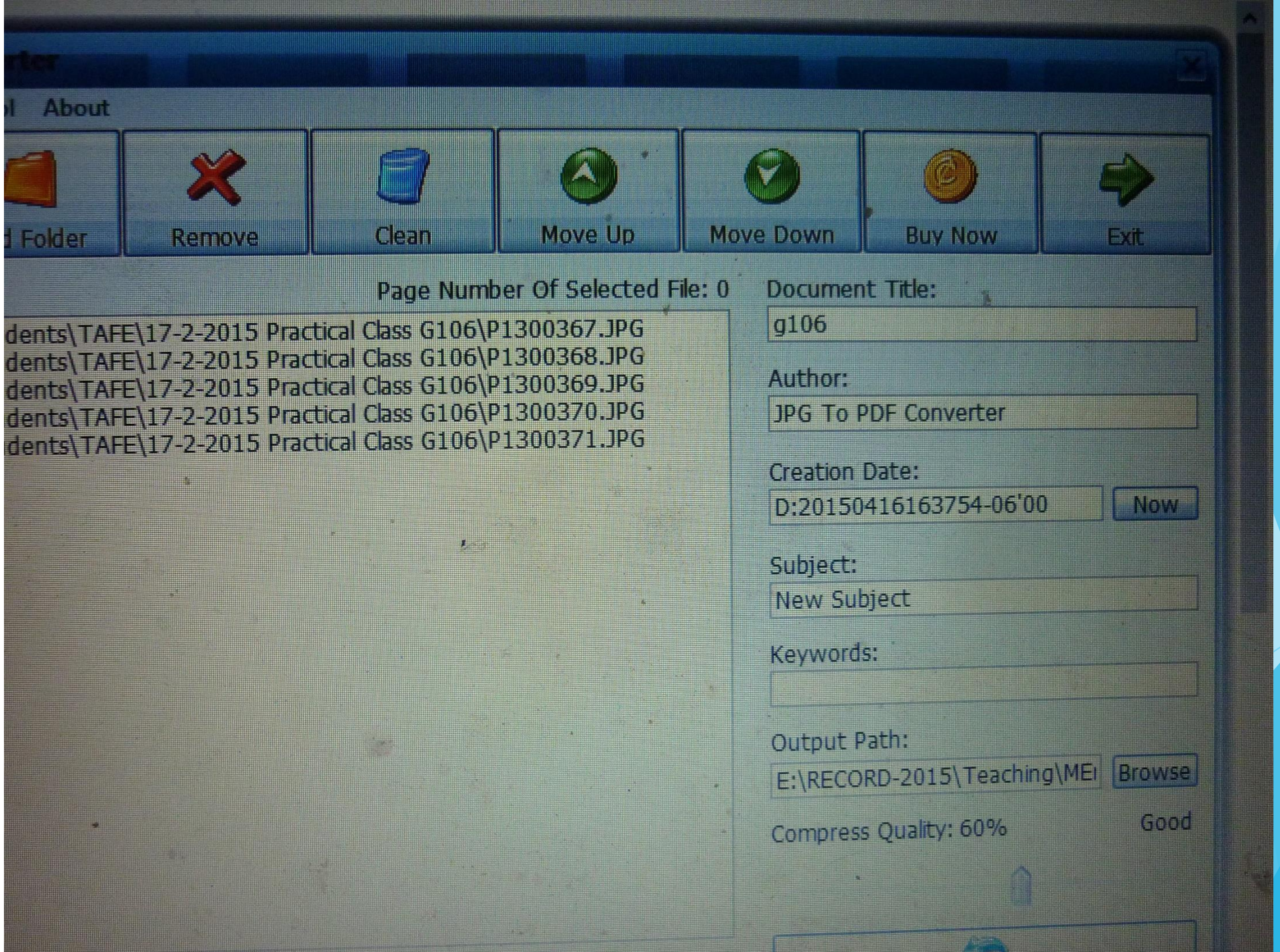
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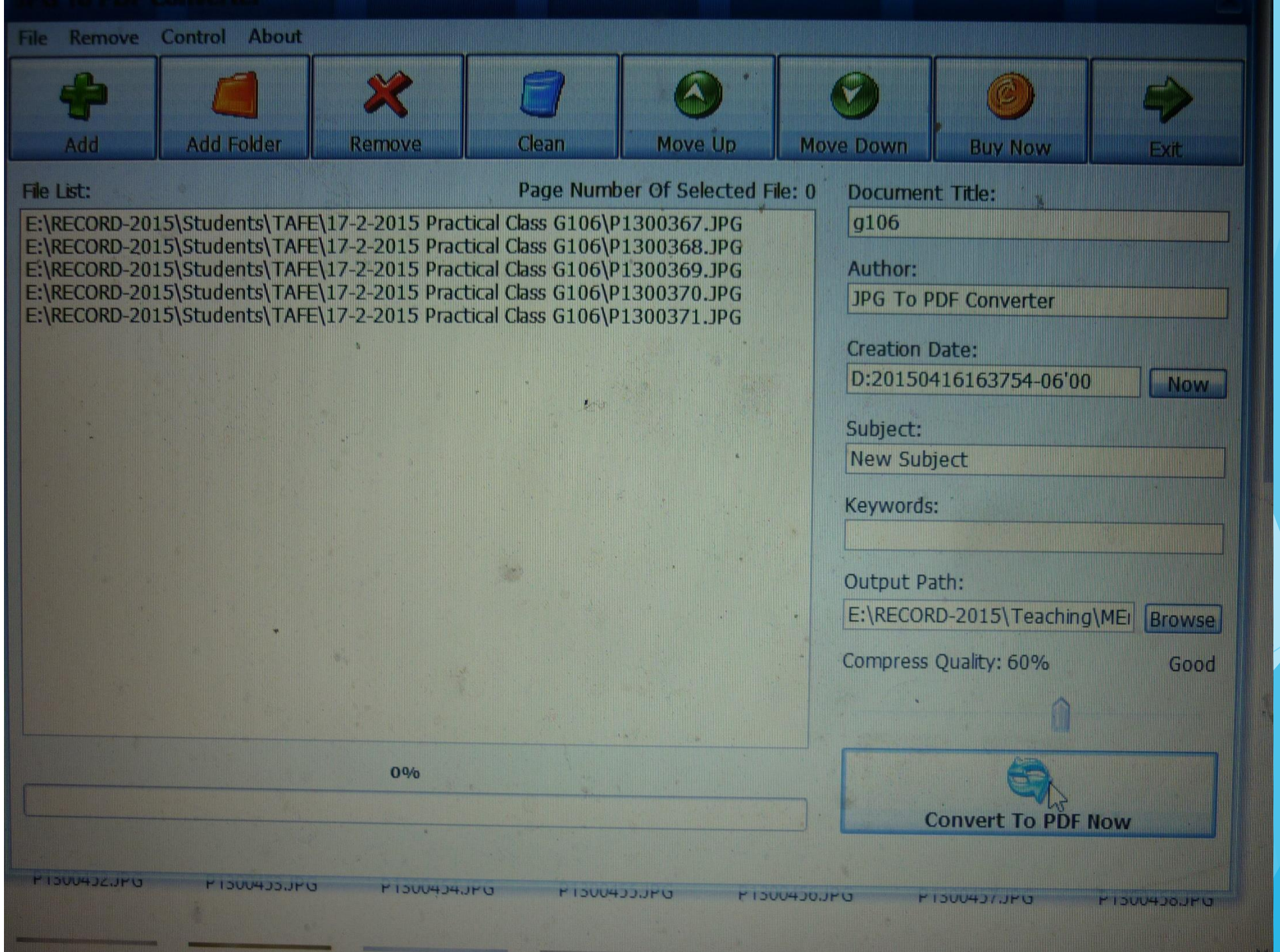
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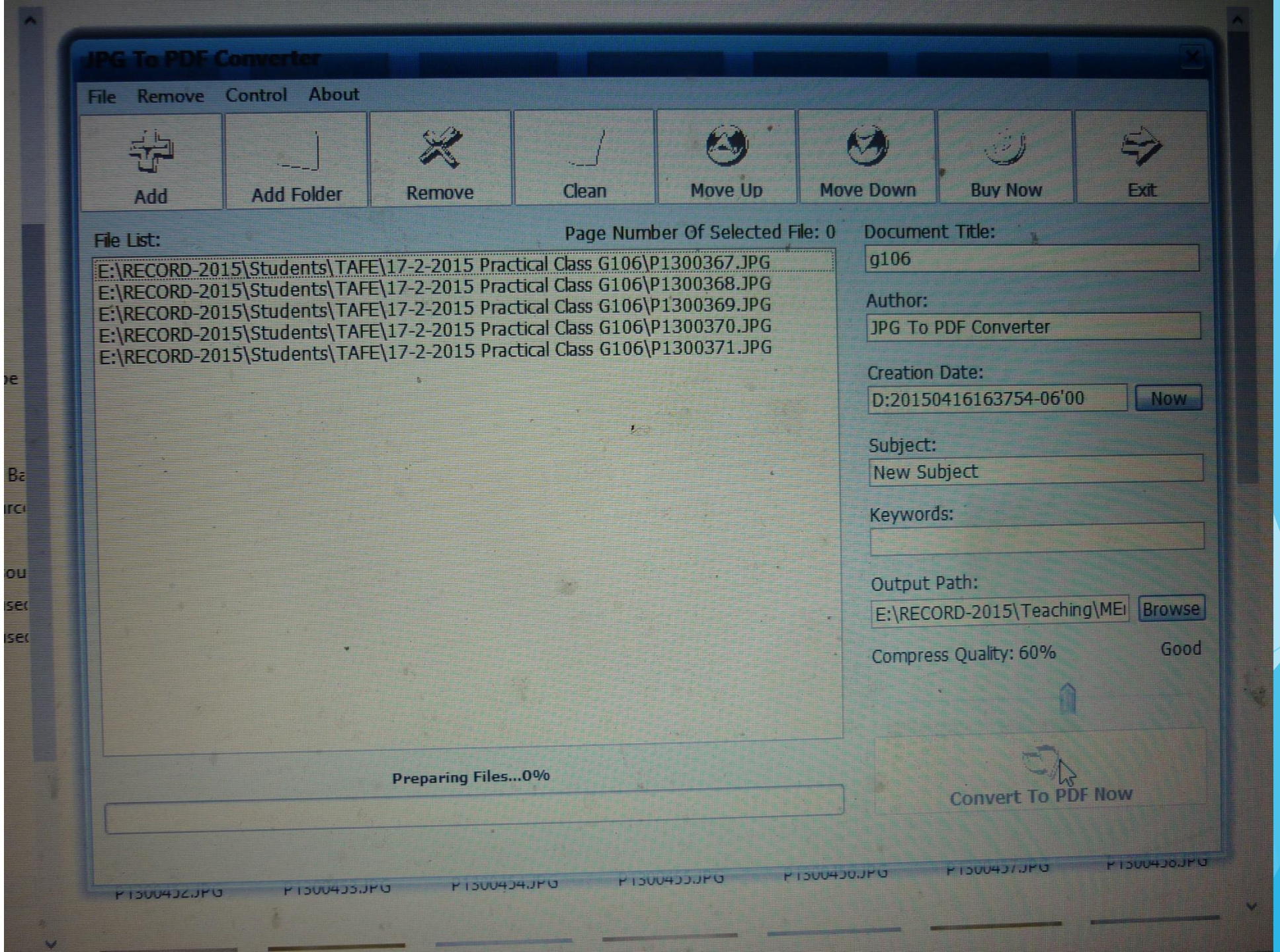
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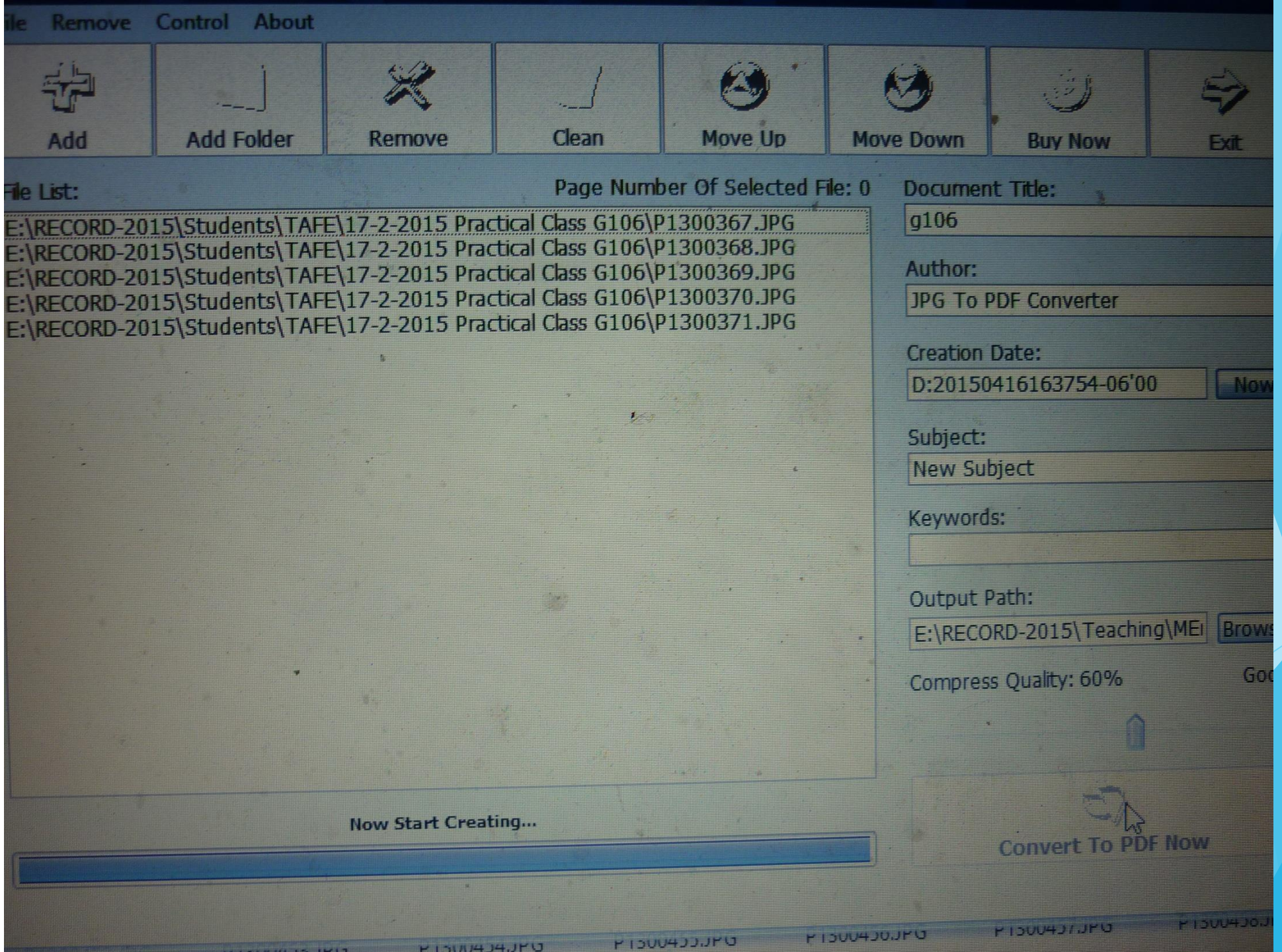
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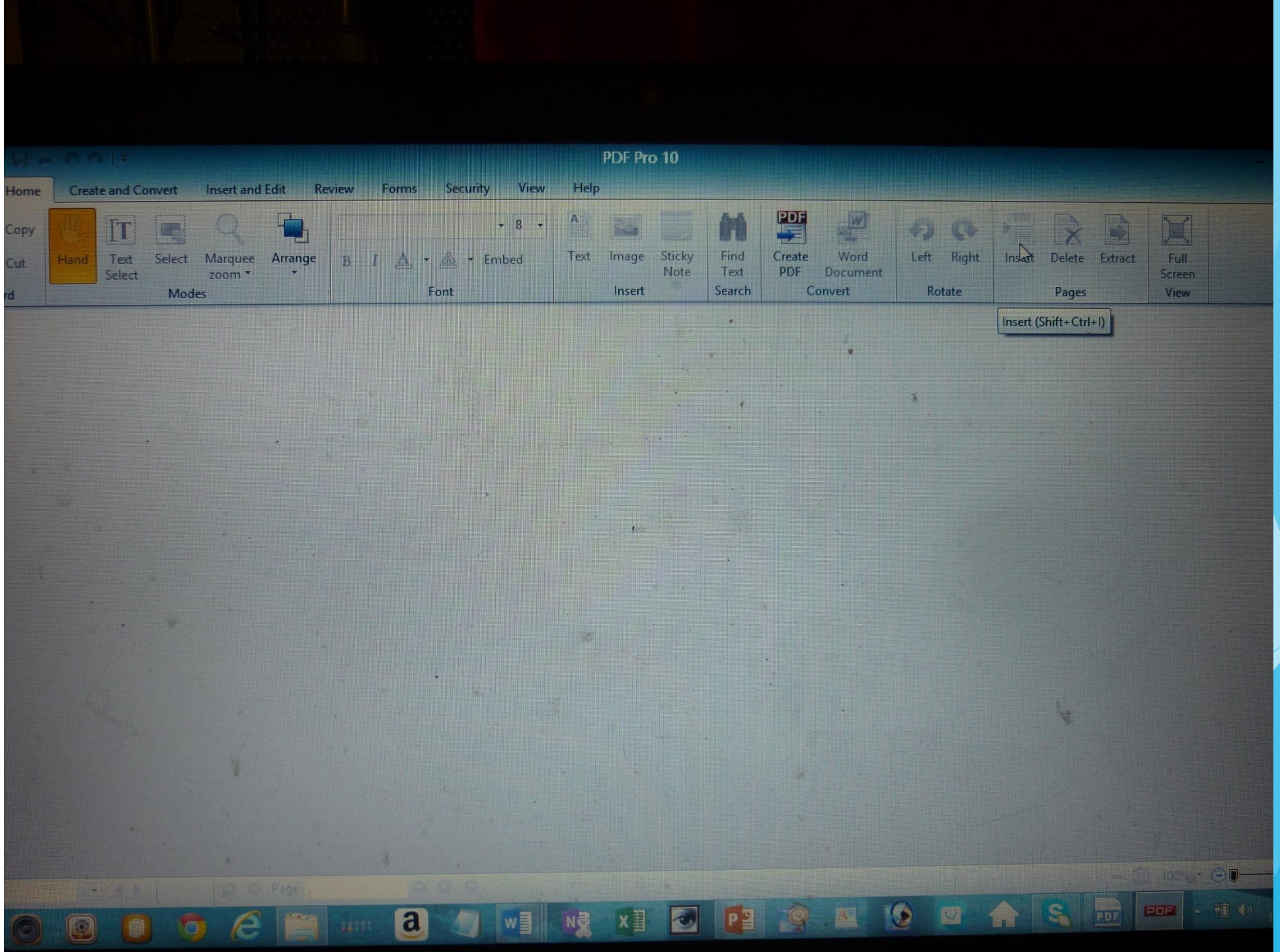
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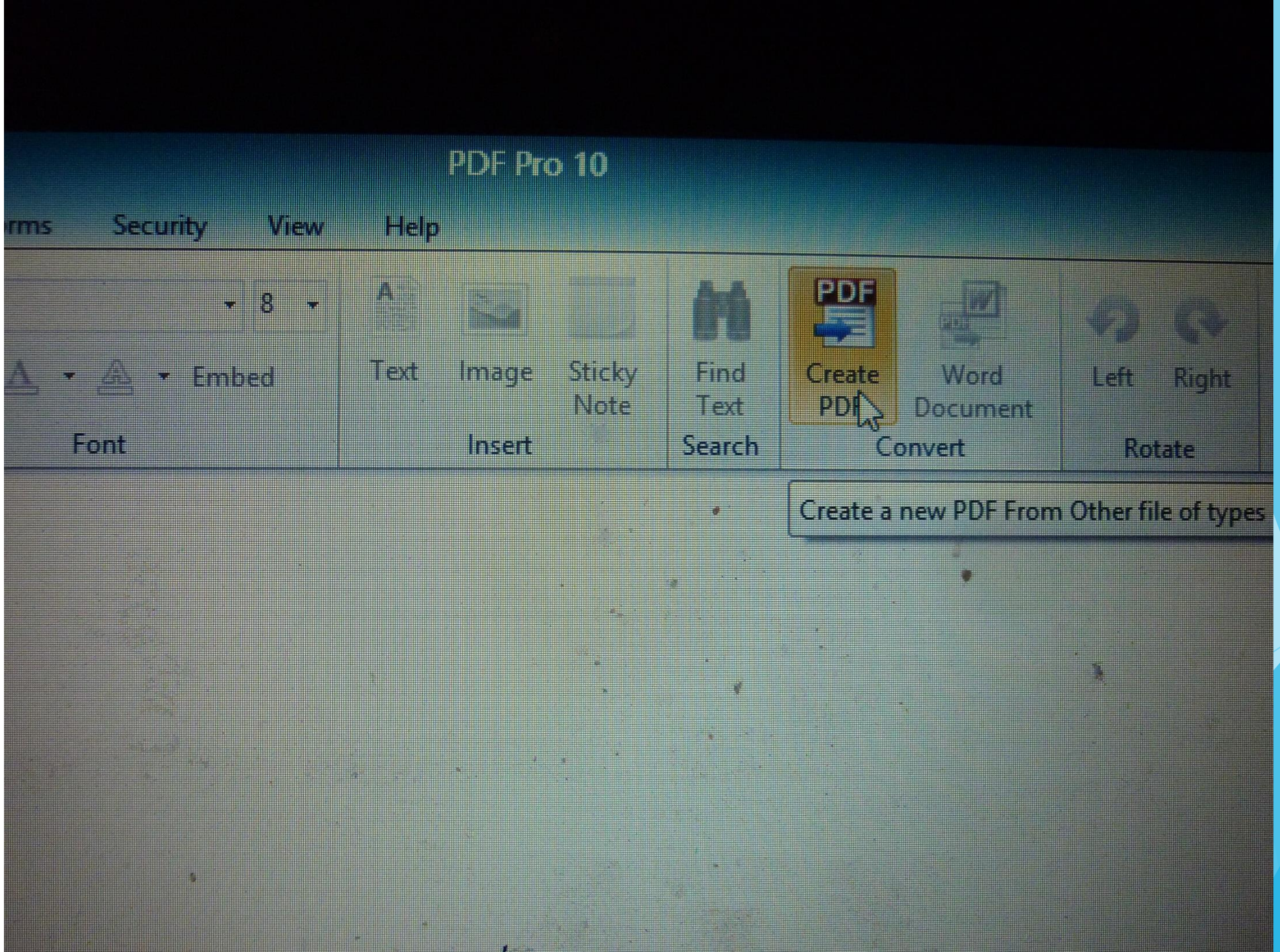
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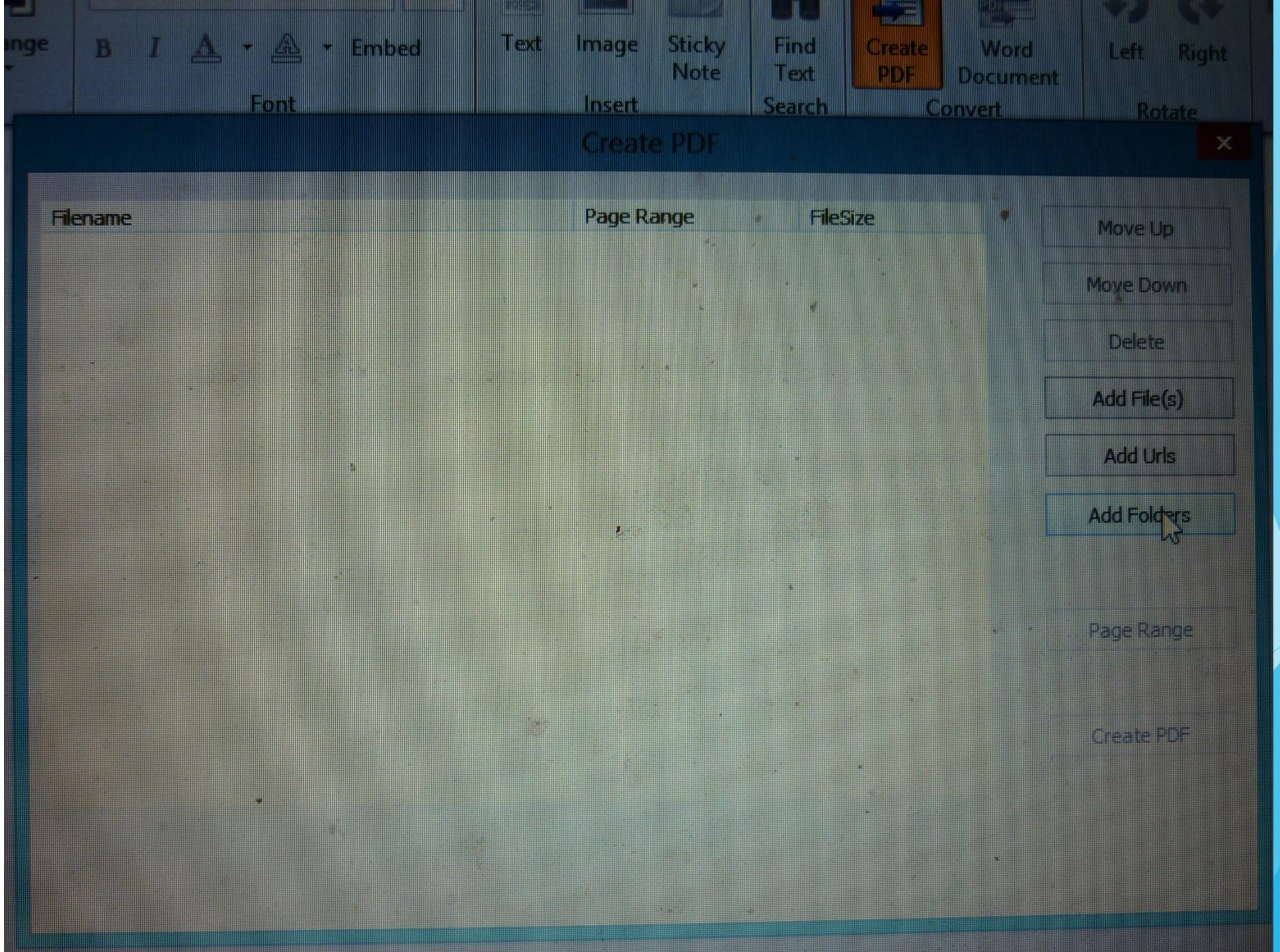
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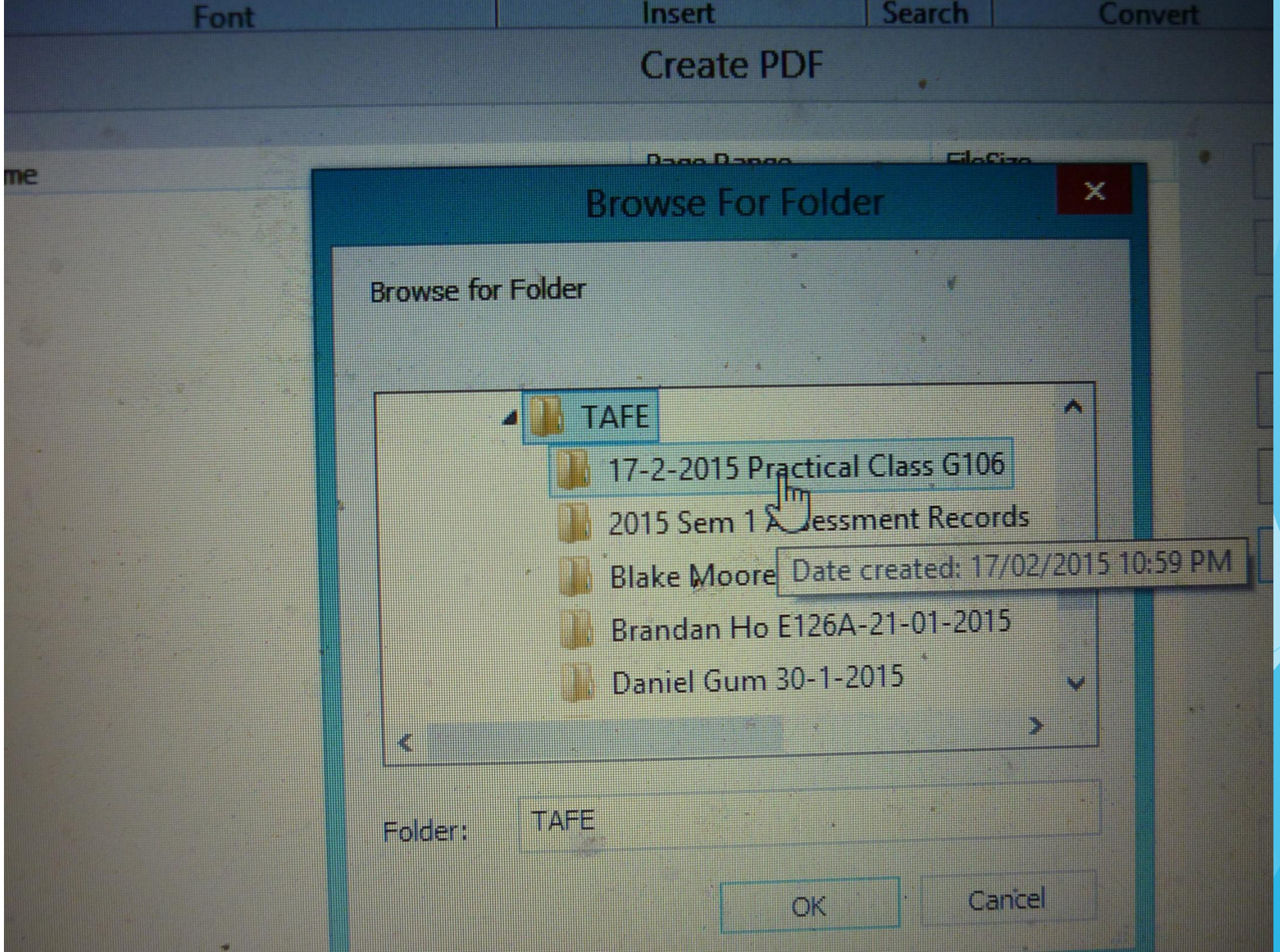
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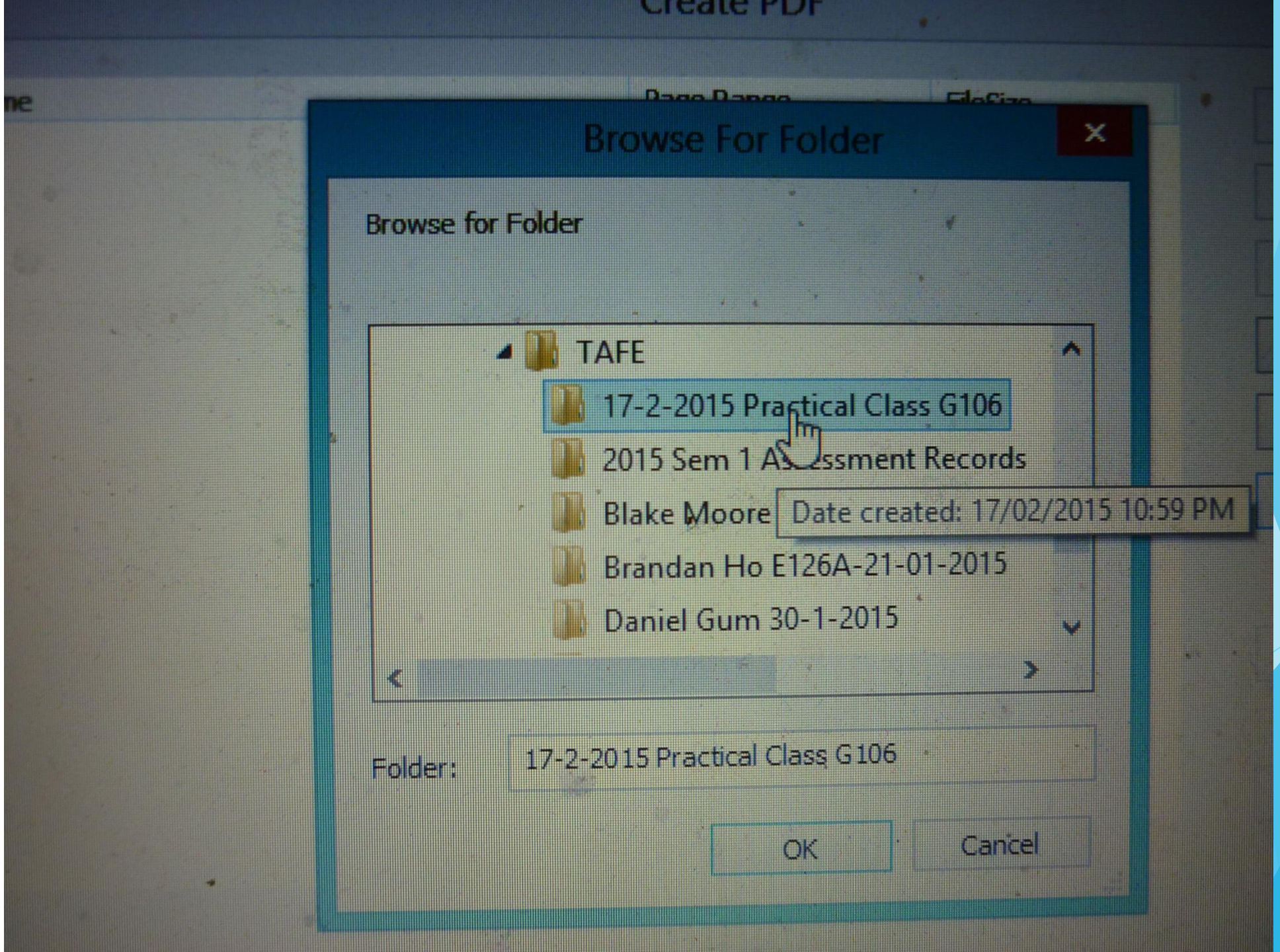
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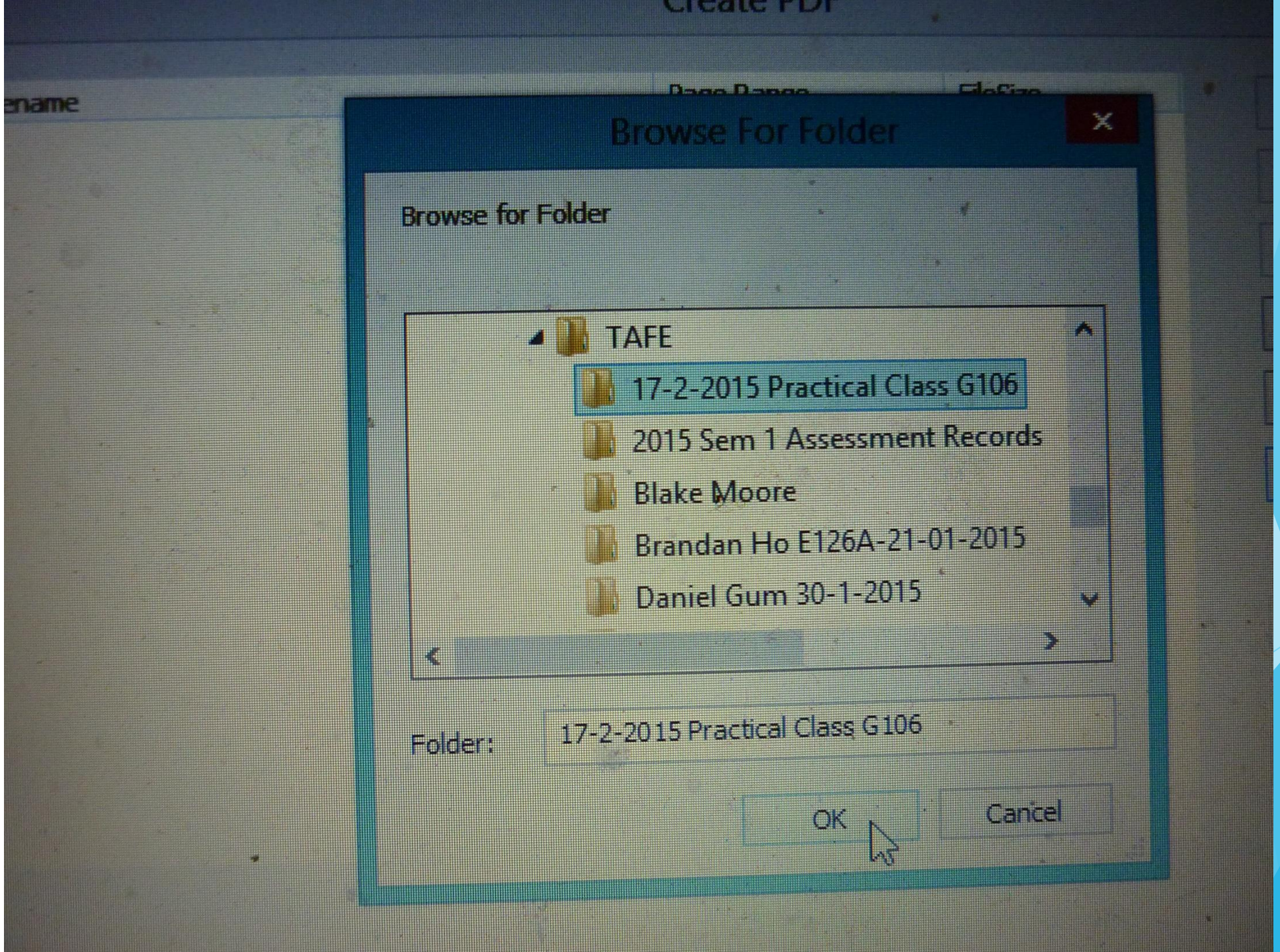
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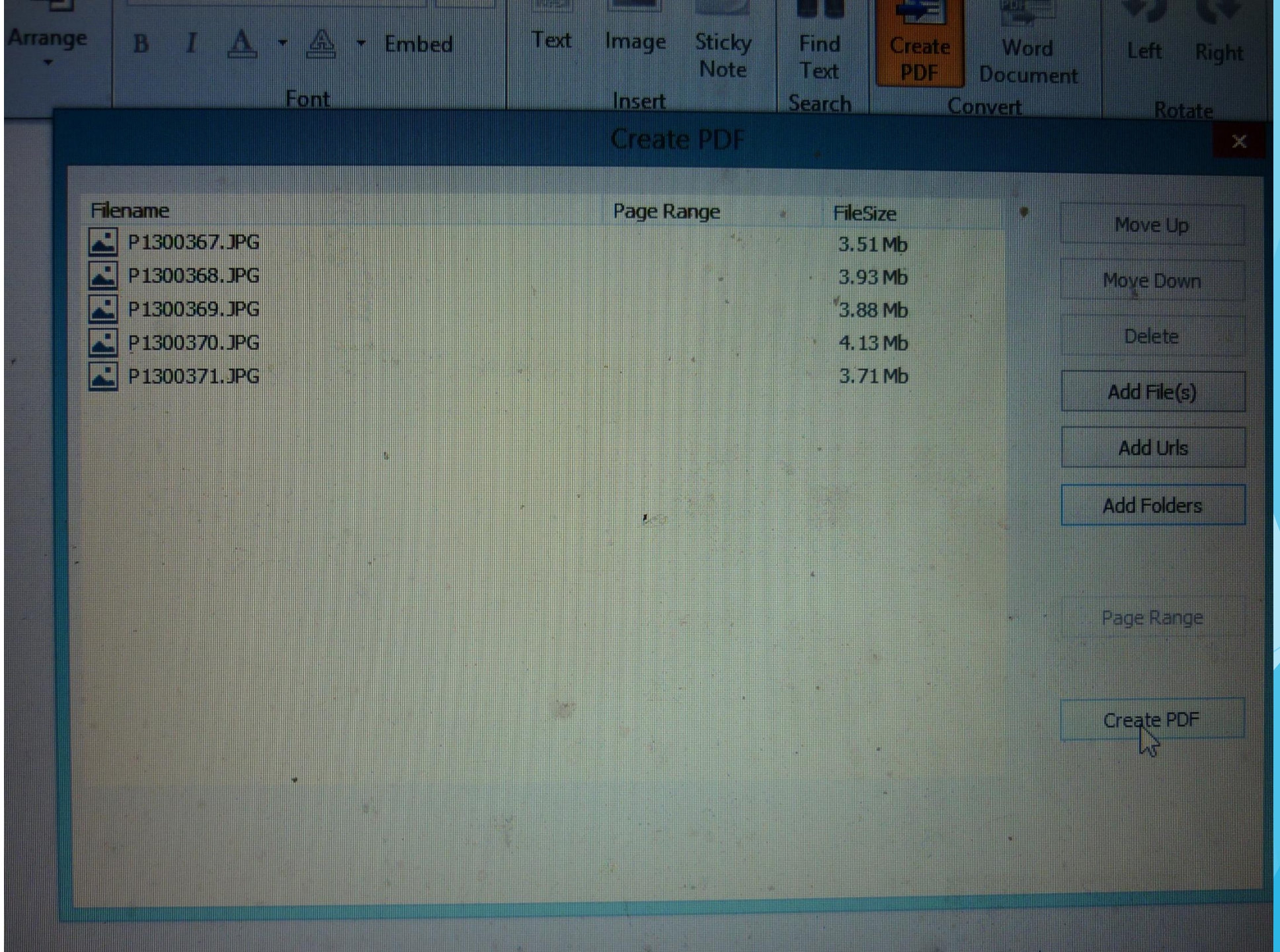
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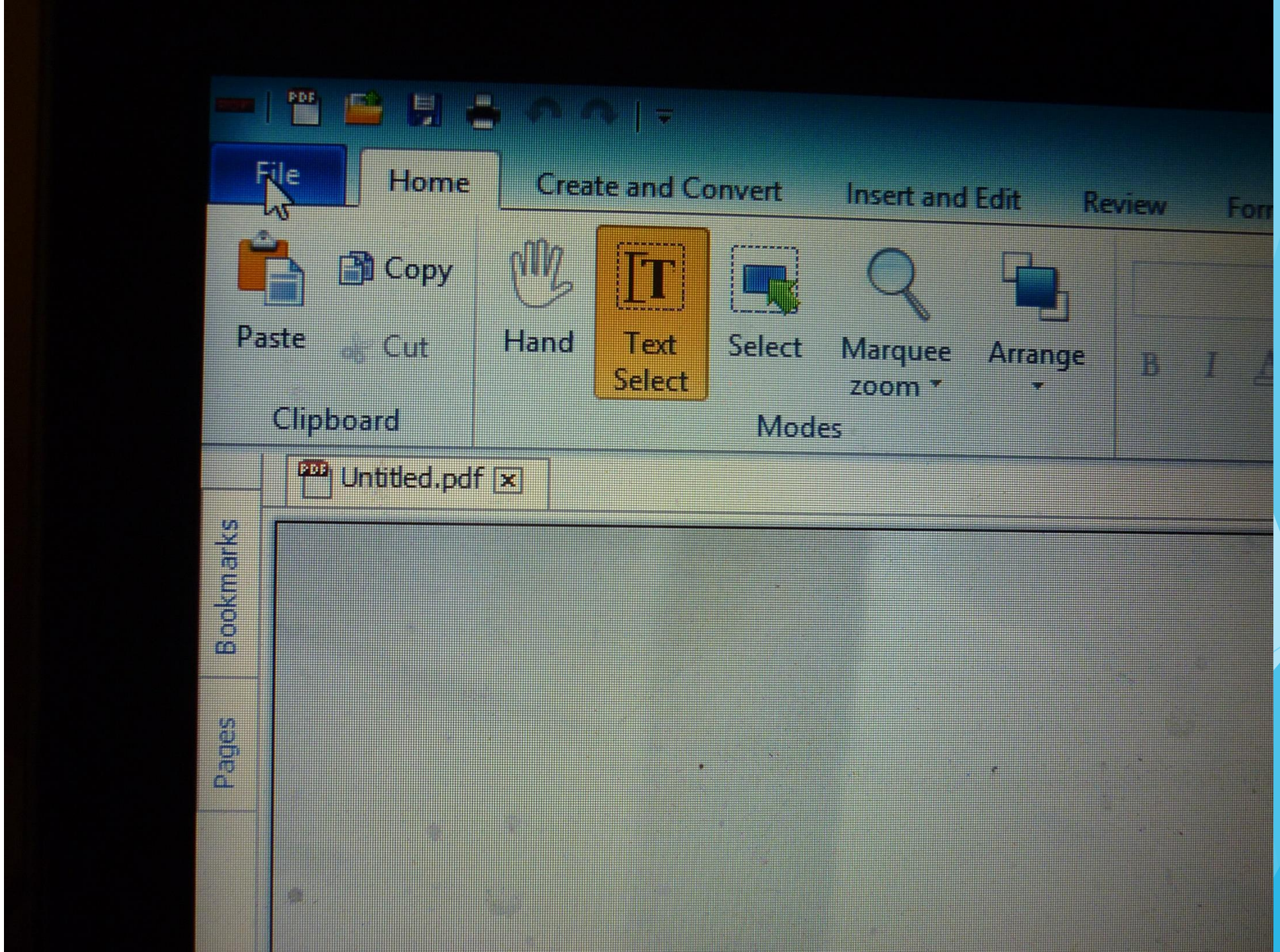
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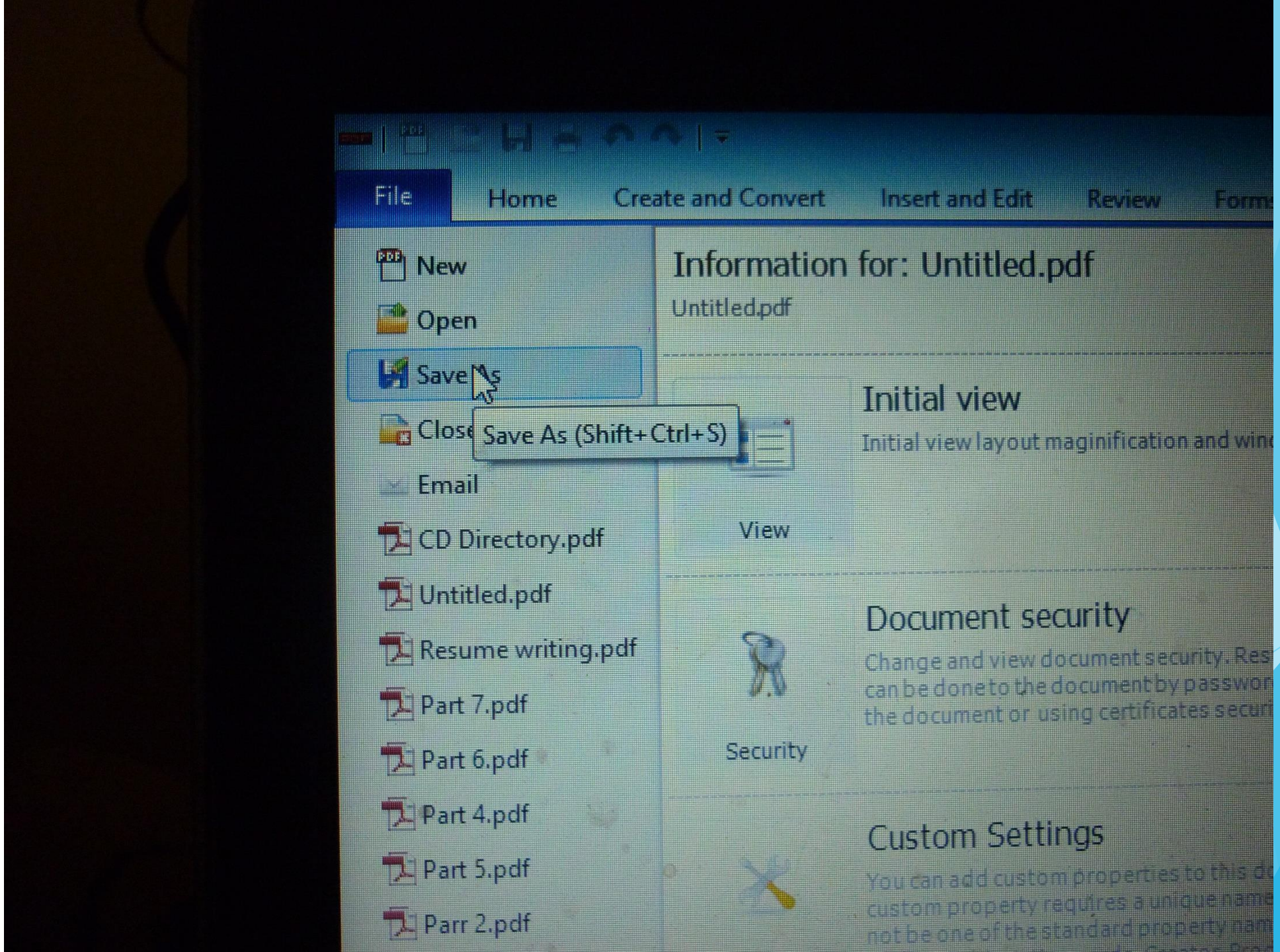
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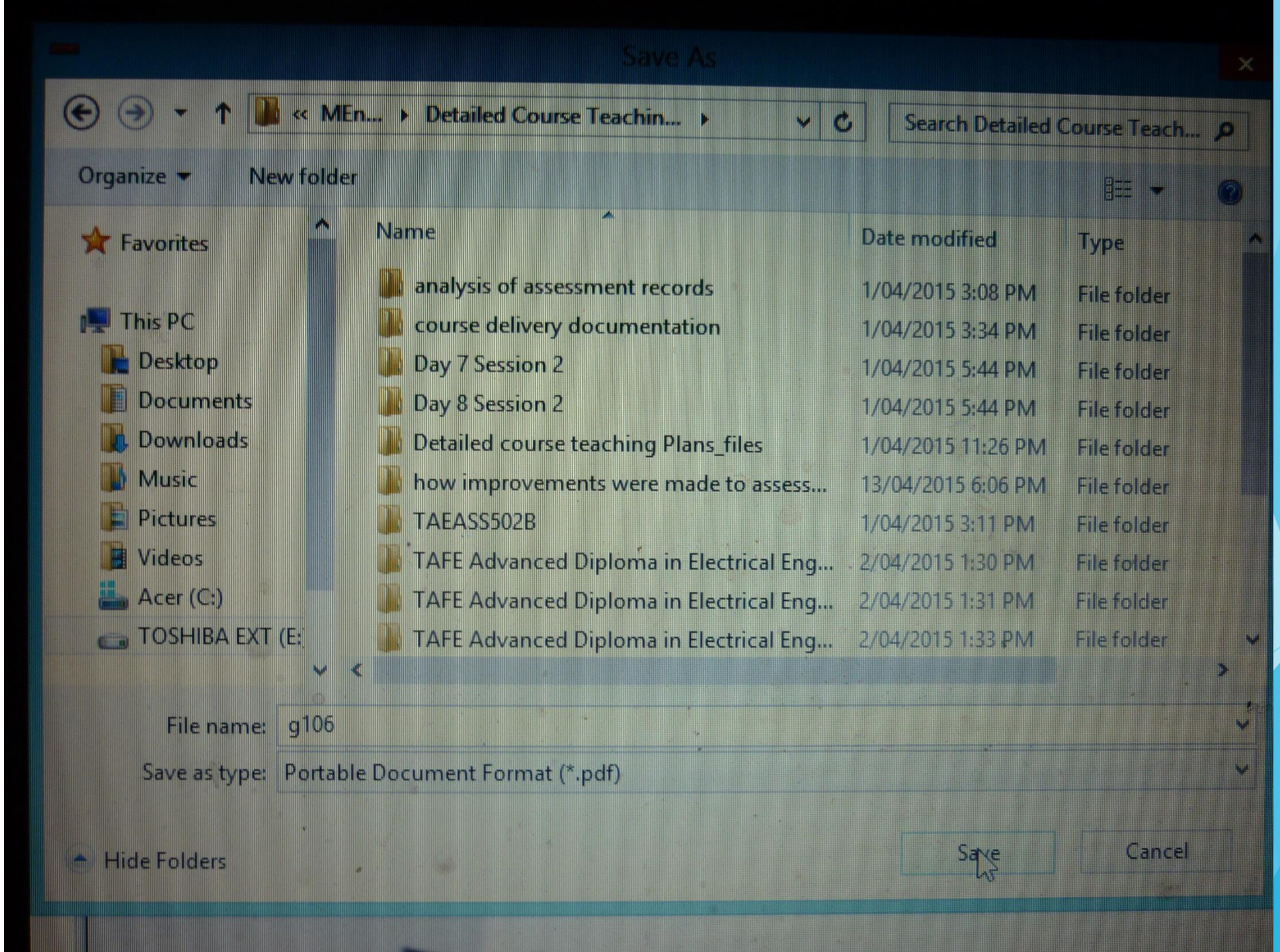
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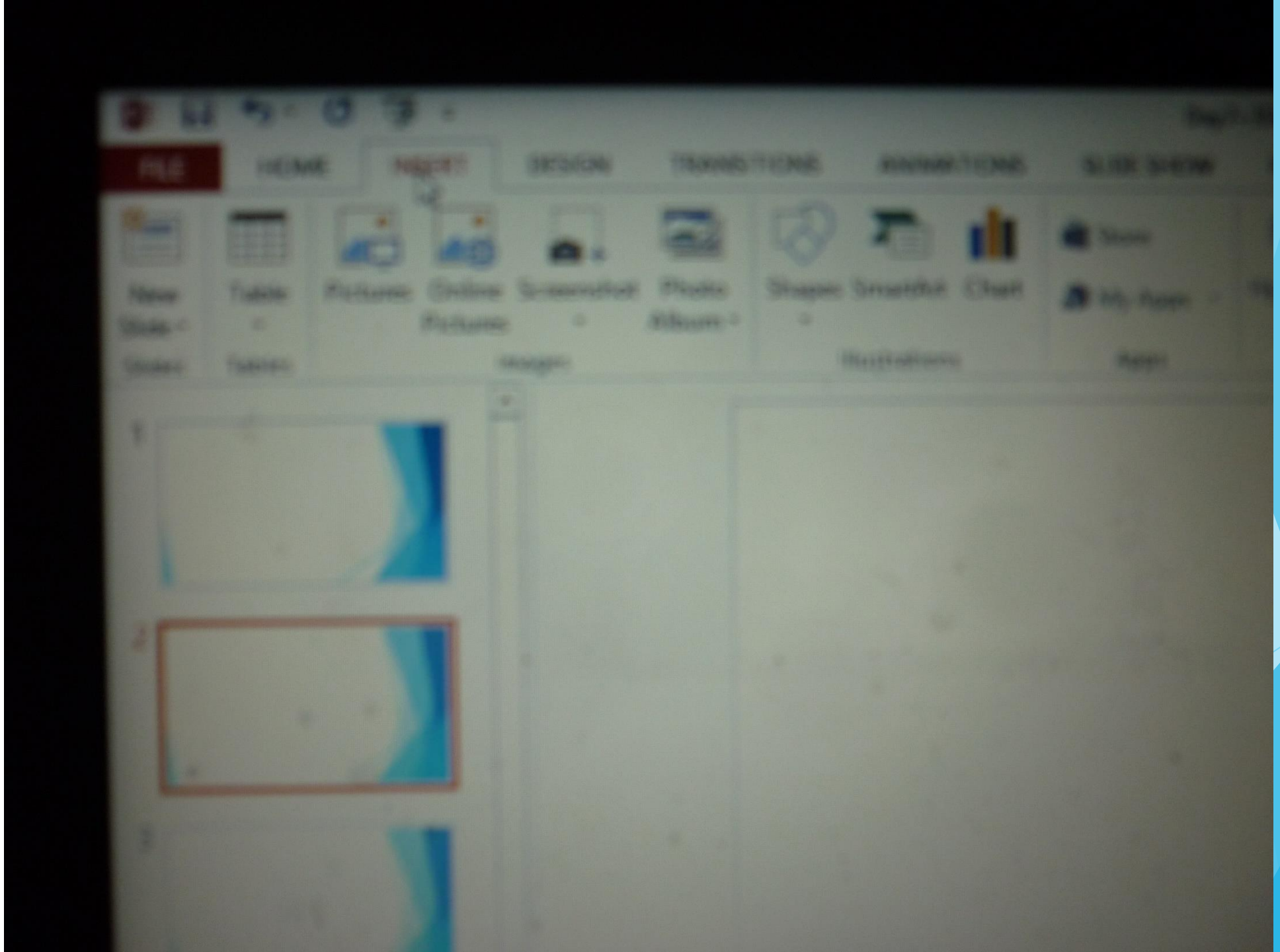
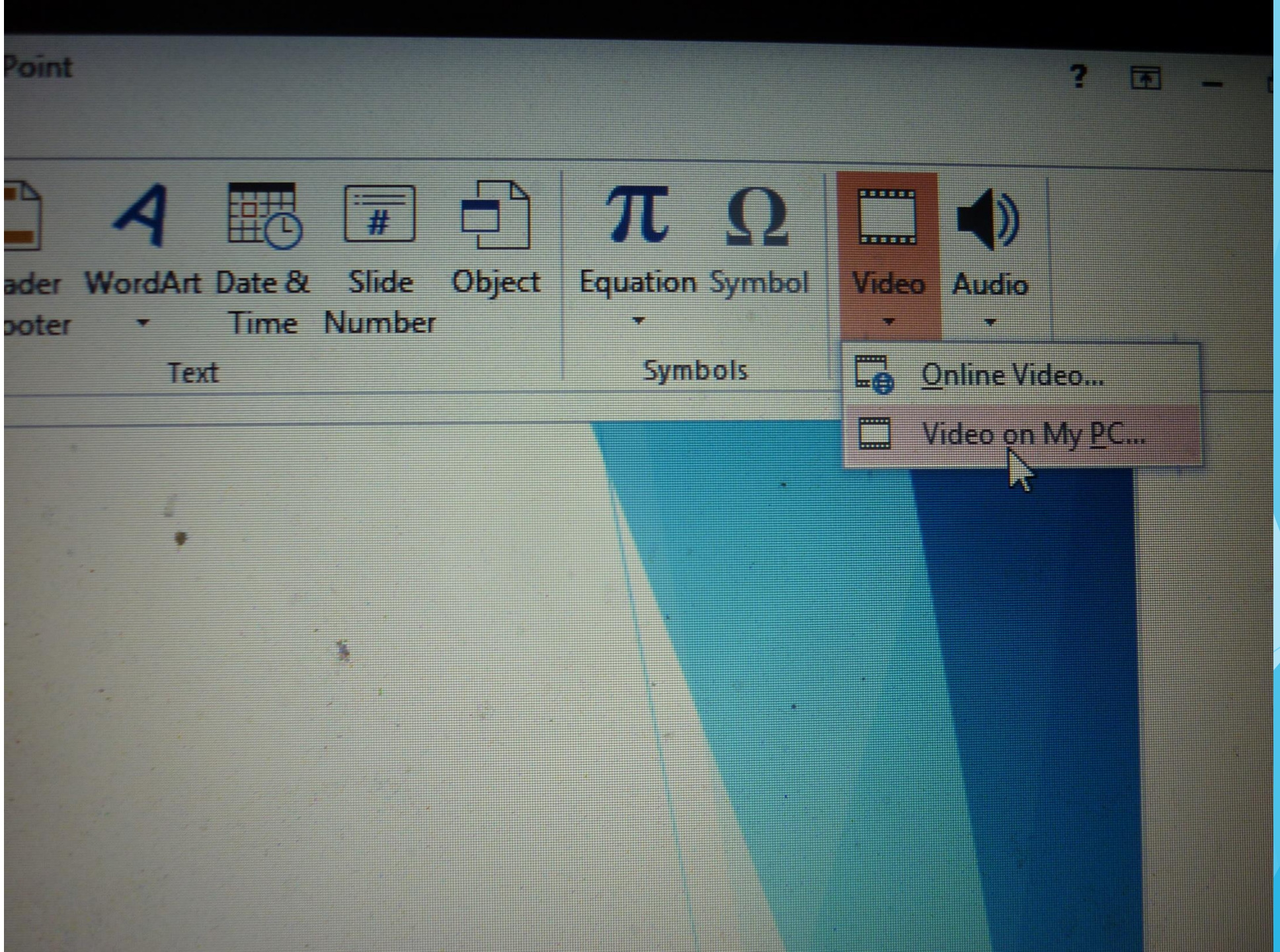


Inserting Audio/ Video into power point slides

- Multimedia lessons can be prepared
- Practical demonstrations can be embedded
- Simulated practicals can be provided
- Needs of expensive resources can be avoided in the mean time, the students can be provided with practical demonstrations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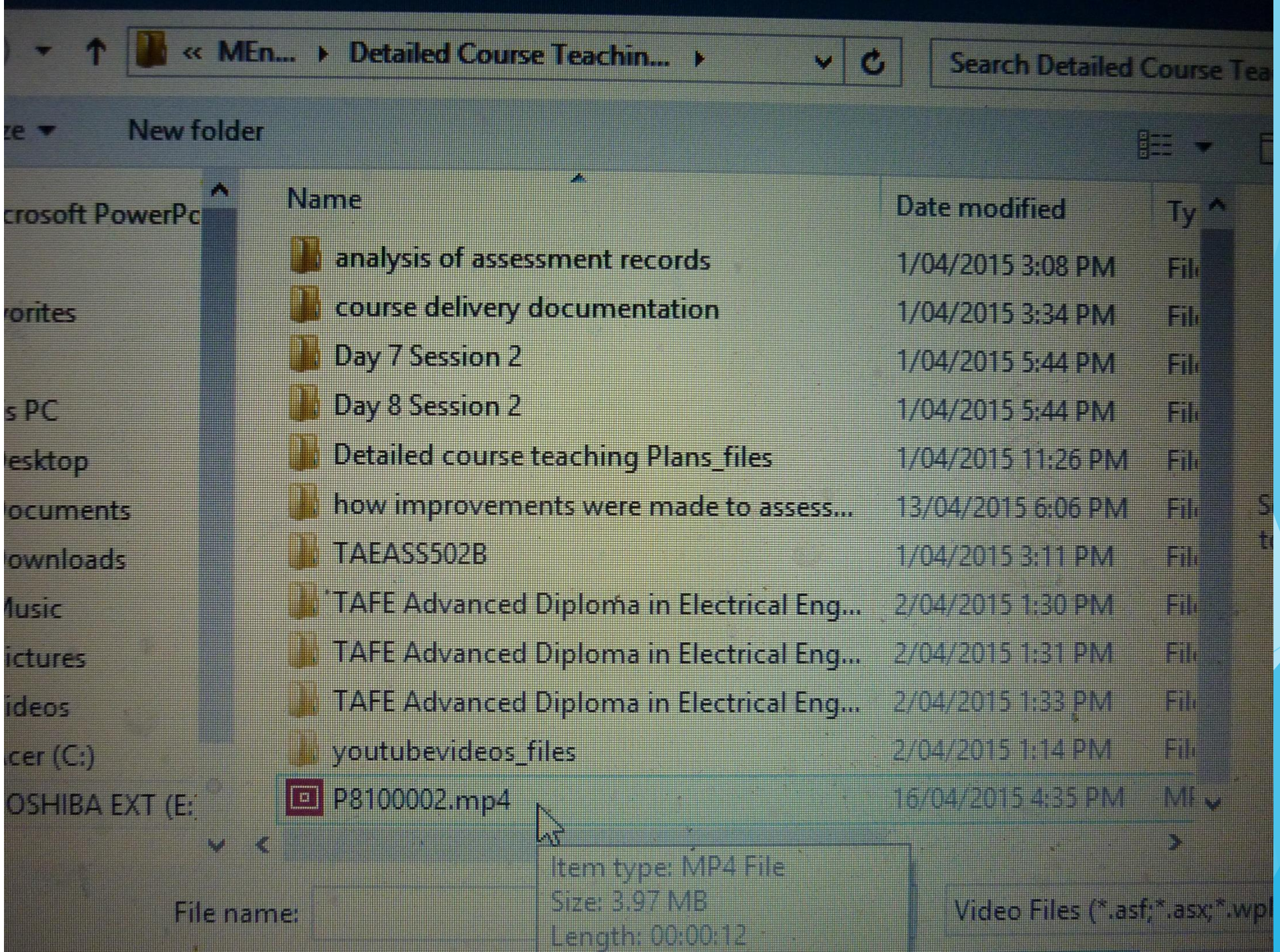
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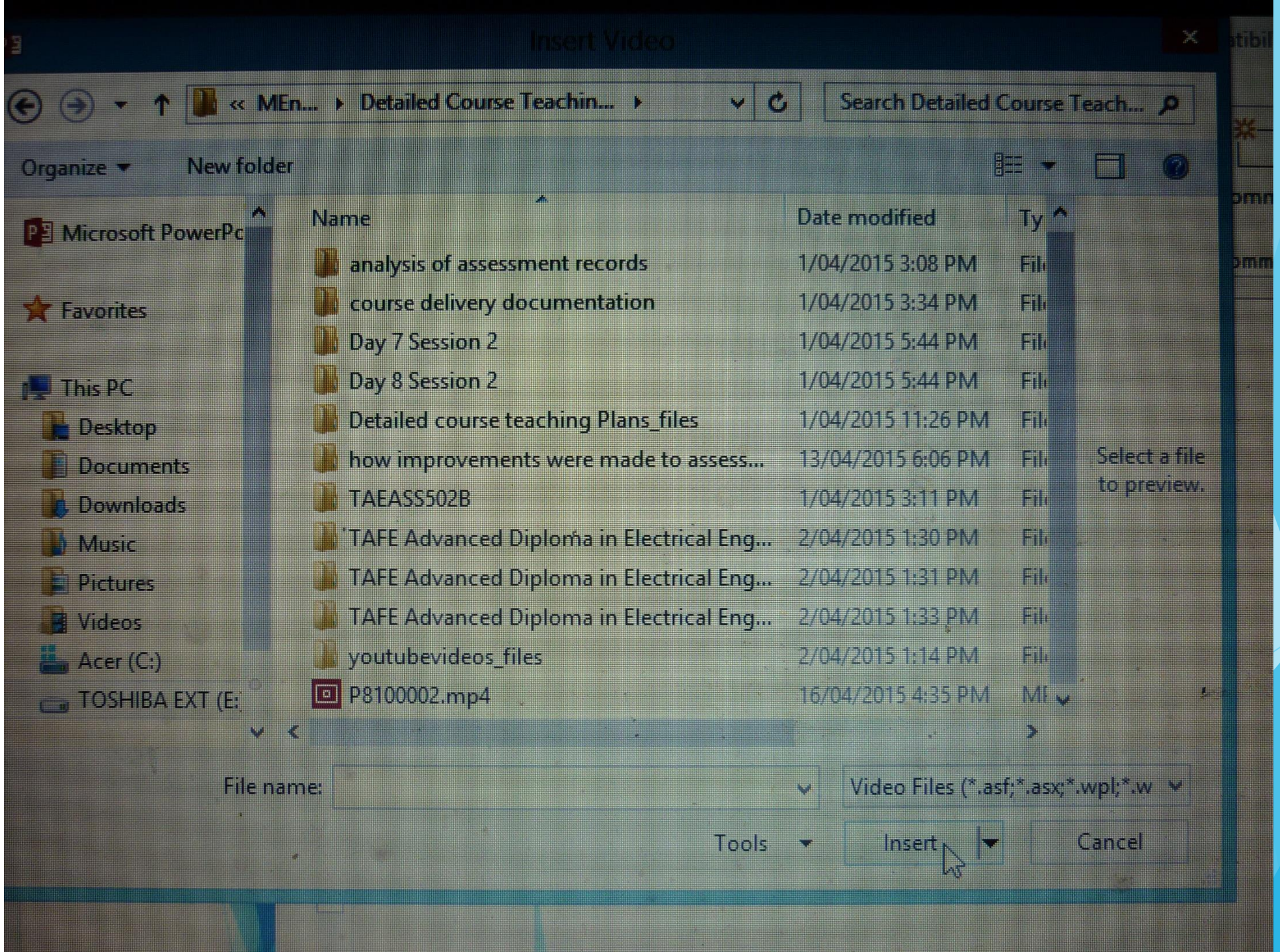
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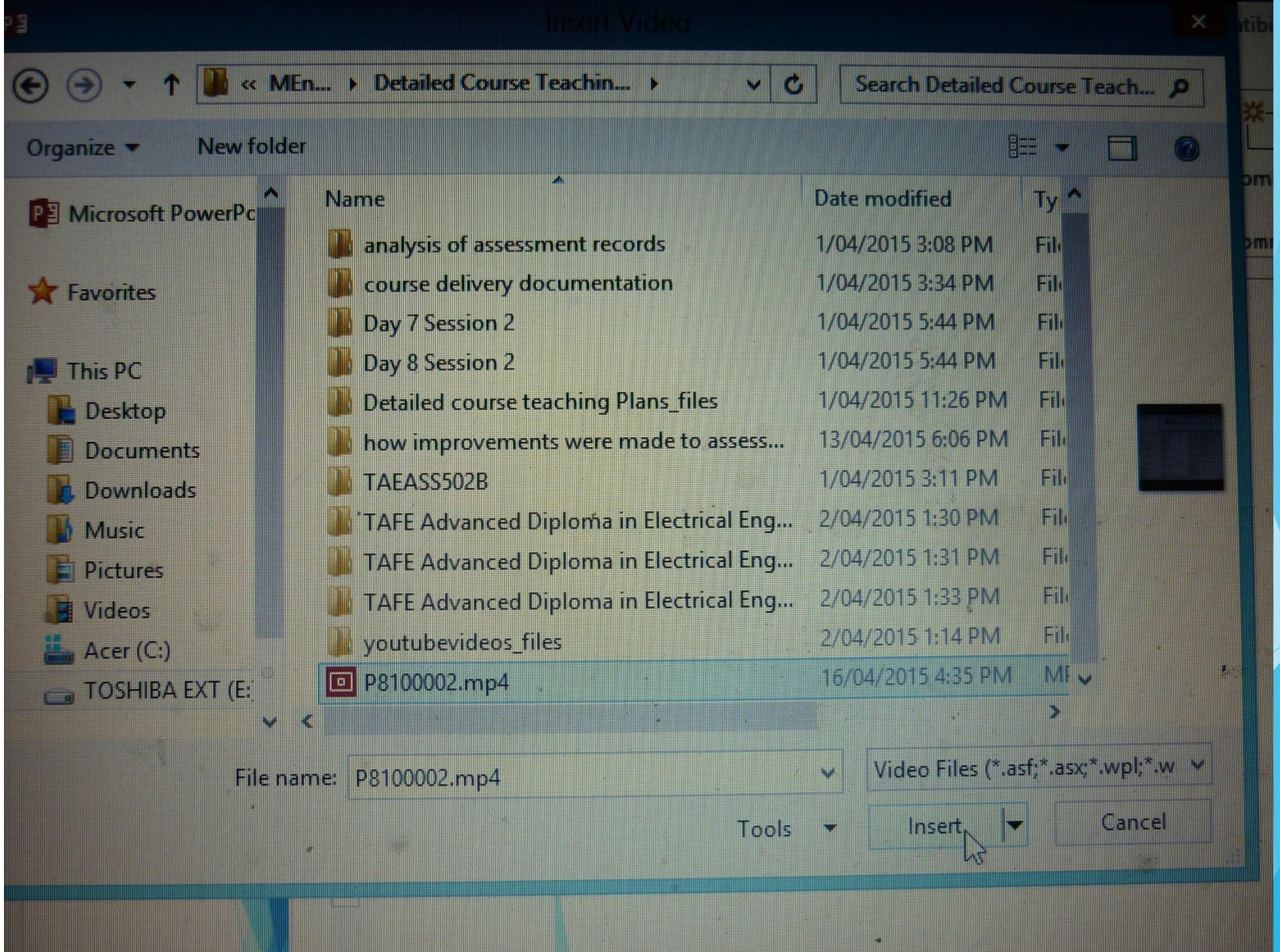
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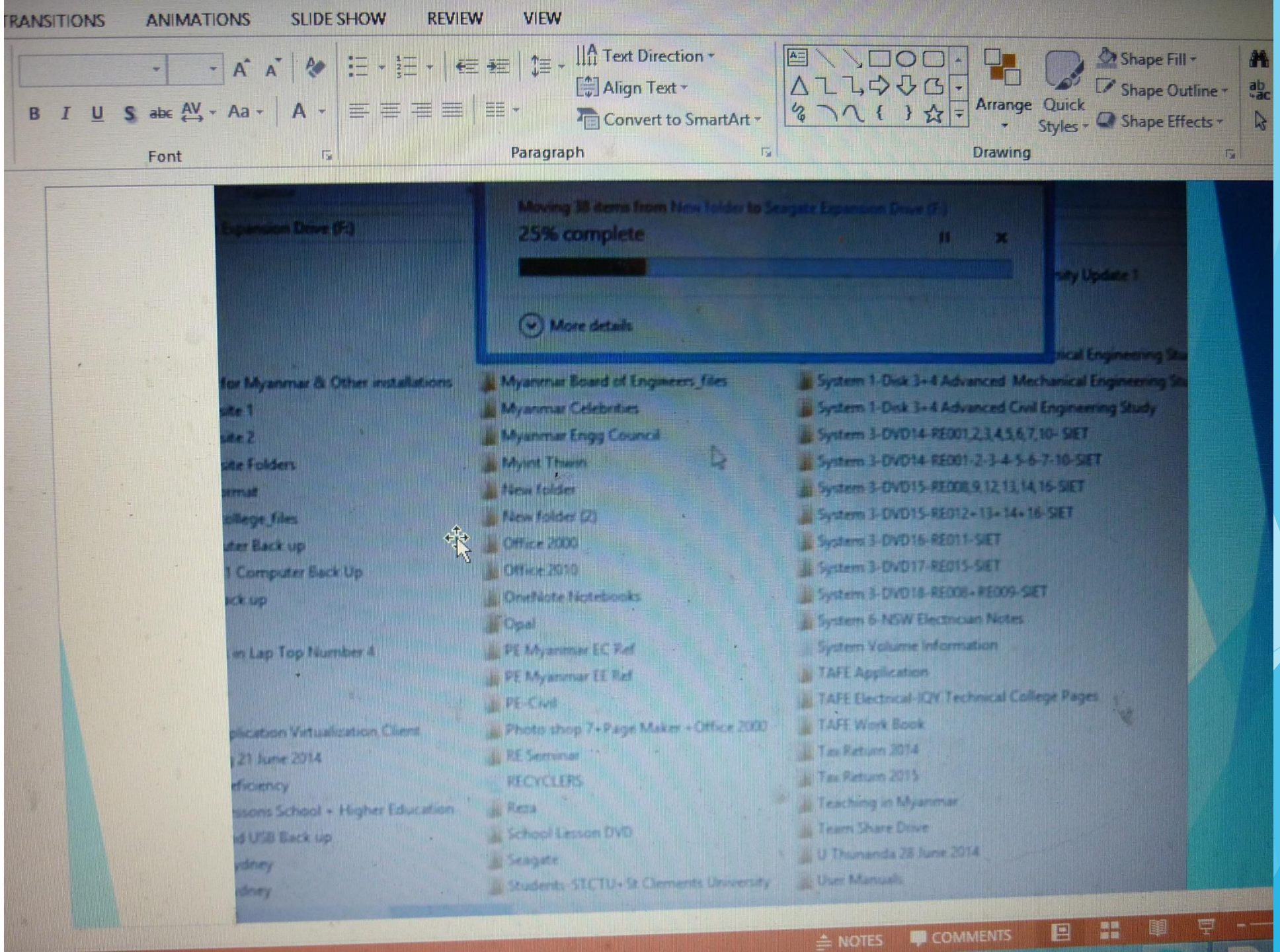
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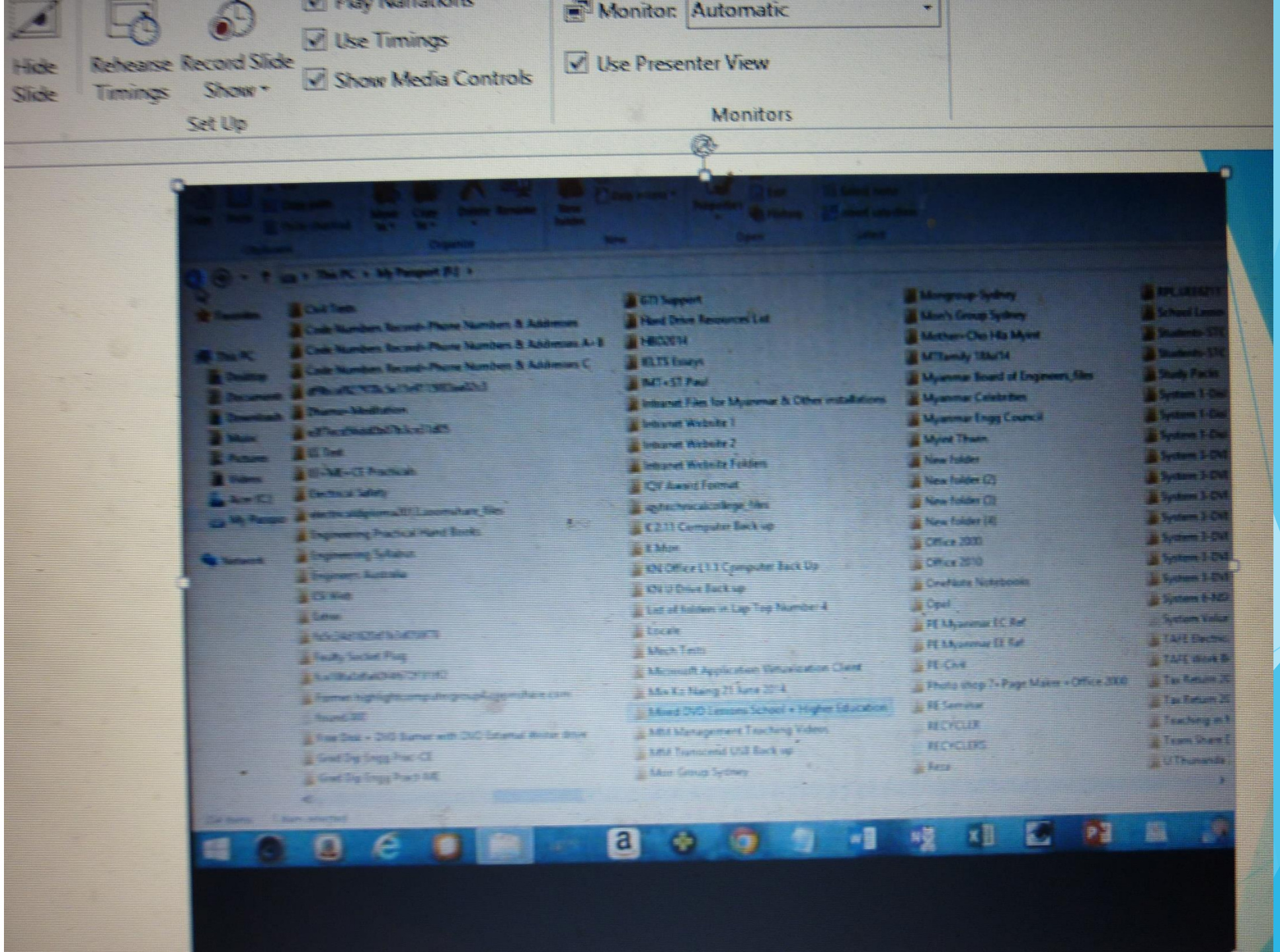
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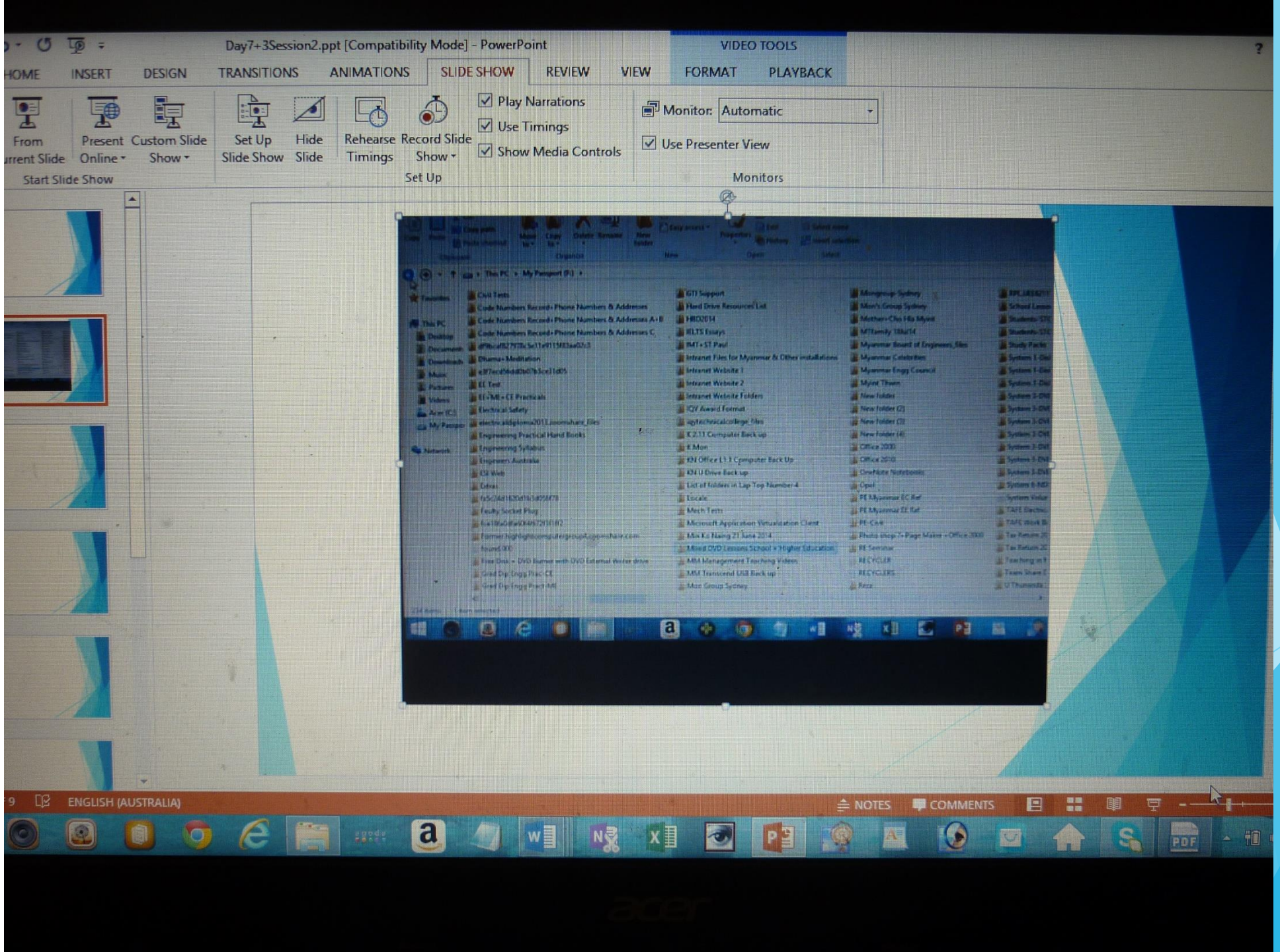
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Practice

Use of DVD recorder, Digital note takers to record the lessons and prepare the multimedia power
point lectures, PDF-JPG format conversion softwares

Advantages

Consistent teaching & learning

Good references

- **It is time consuming to start but once it has been developed, the head of the department can effectively control the whole and teaching and learning system**
- **The students can be directed to self place learning, resource research .**
- **By this way the self dependency and confidence can be developed**

Disadvantages

- **Needs IT skills**
- **Need to prepare all lessons in advanced.**
- **Computer competency**
- **Time consuming**
- **Limitation of resources**

Dimension	Traditional classroom	Classroom using Internet - Multimedia - information technology
Primary source of knowledge	Teacher	Available "out there" in the net
Learning group	Class size or small group	Class or the individual in an unlimited number of net sites
Learner age range	Uniform	8 to 80
Learning initiator	Mostly a teacher	The student
Learning schedule	In school, at fixed hours	In school as well as any other time
Place of learning	The school	Next to a computer
Learning tools	Reading and writing materials	Computer technology
Learning style	Linear	Parallel
State of updated knowledge	Knowledge rarely updated	State of the art knowledge
Student questions directed to	Teacher: question time limited	Teacher and experts: question time flexible
Evaluation	Teacher is main source	Projects are main source
Laboratory work	May be a % of class time	Mainly indirect as lab simulation

Quality Control and the WWW

There is a wealth of poor quality information on the WWW -- endless examples of information that is inaccurate, inaccessible, invalid, incomplete, out of date, unreadable or simply irrelevant. Students (and teachers) need a set of evaluation skills beyond those required for print media.

Remember that virtually anyone can publish virtually anything on the WWW; authors make mistakes, assume personas, exaggerate, make false claims, and simply lie.

So what do we need to consider? Source (author / authority / affiliation), Content (accuracy / objectivity), Currency and Purpose would be at the top of my list.

Source (author / authority / affiliation)

Who wrote the material?
What are his/her credential on this subject? [A PhD in physics does not guarantee authority on AIDS, politics or theology]

What are his/her professional affiliations? Can they be verified independently? [And are they the same as the site's, or is the site a "personal page" on a commercial service?]

Content (accuracy / objectivity)

Are the sources for all factual information, including charts and diagrams, cited?

Can the cited sources be located?

Is the material well-written (comparable to a textbook)?

Is there evidence of bias, or a particular point of view on a controversial topic?

Are the links provided relevant, unbiased and comprehensive?

Is the site free from advertising? If not, does the advertiser have a vested interest in the topic? [such as a pro-smoking page supported by a tobacco company]

Currency

Is this a subject which changes rapidly over short periods of time?

Is a publication date / date of last revision provided?

If data are time-dependent, are dates provided?

?

Purpose

Is it clear why the author wrote the material? Is the author affiliated with an educational institution (.edu), a non-profit organisation (.org), the government (.gov), or a commercial venture (.com)?

[It is important to note that some domains can be bought by pretty much anyone and anyway, would you trust every country's .gov sites?] In other words, Check the Source

Is the purpose of the sponsoring organisation clear?
Can the organisation be located independently of the WWW (physical address, mailing address, telephone/fax)?

Teachers as Learners

Before commencing any program of supervision, it is important to develop an understanding of the teacher as a learner. Teachers' practice, it is held, is determined by the construction of an internally verifiable base of knowledge.

Learning or change requires a teacher to test new knowledge against what he/she already knows to be "true". Sometimes called a "constructivist" perspective [1] (MacKinnon & Erickson, 1988), it requires that any attempt "to change the practices of those who teach, it is necessary to come to grips with the subjectively reasonable beliefs of teachers" (Fenstermacher, 1978, p.174).

To understand the teacher as a learner, it is useful to have some conception of the what and how of teacher learning.

Michael Fullan (1990) describes four aspects of the teacher as learner - technical, reflective, inquiry and collaborative. "[These aspects] must be seen in combination. Each has its separate tradition of research and practice, and each has made important contributions in its own right.

The mastery of technical skills increases instructional certainty; reflective practice enhances clarity, meaning and coherence; inquiry fosters investigation and exploration; collaboration enables one to receive and give ideas and assistance" (p. 19-20).

ED 308 Computer Supported Learning & Distance Education/Computer Supported Learning.pdf

Page 14 to 22 Collaborative learning:

- **promotes critical thinking skills**

- **collaborative learning develops higher level thinking skills;**
- **stimulates critical thinking; helps students clarify ideas through discussion and debate;**
- **enhances skill building and practice; develops oral communication skills;**
- **fosters metacognition in students; and**
- **improves students' recall of text content through cooperative discussions;**

- involves students actively in the learning process

- And here, that it creates an environment of active, involved, exploratory learning; encourages student responsibility for learning;
- involves students in developing curriculum and class procedures;
- provides training in effective teaching strategies to the next generation of teachers; helps students wean themselves away fromconsidering teachers the sole sources of knowledge and understanding;
- fits in well with the TQM and CQI models of effective management;
- promotes a learning goal rather than a performance goal; fits in well with the constructivist approach; and
- allows students to exercise a sense of control on task;

models appropriate student problem-solving techniques

- **Collaborative learning fosters modeling of problem solving techniques by students' peers;**
- **allows assignment of more challenging tasks without making the workload unreasonable;**
- **can help weaker students improve their performance when grouped with higher achieving students;**
- **provides stronger students with the deeper understanding that comes only from teaching material (cognitive rehearsal);**
- **leads to the generation of more and better questions in class;**
- **provides a safe environment for alternate problem solutions; and addresses learning style differences among students.**

Collaborative learning: **Psychological Benefits**

• can increase students' self esteem

Group learning can help to reduce anxiety; enhance student satisfaction with the learning experience; promote a mastery attribution pattern rather than helpless attribution pattern; and encourage students to seek help and accept tutoring from their peers;

• develops positive attitudes towards teachers Such an environment can create a more positive attitude on the part of students towards their instructors; and create a more positive attitude by instructors toward their students; and set high expectations for students and teachers.

Social Benefits

Collaborative learning:

- **develops a social support system for students**

For example, it promotes student-faculty interaction and familiarity;

- **Develops social interaction skills; promotes positive societal responses to problems and**
- **fosters a supportive environment within which to manage conflict resolution;**
- **creates a stronger social support system; fosters and develops interpersonal relationships; and**
- **helps students to develop responsibility for each other;**

builds diversity understanding among students and staff

- **Collaborative learning builds more positive heterogeneous relationships;**
- **encourages diversity understanding; fosters a greater ability in students to view situations from others' perspectives (development of empathy); and**
- **helps majority and minority populations in a class learn to work with each other (different ethnic groups, men and women, traditional and non-traditional students);**

- **establishes a positive atmosphere for modeling and practicing cooperation**
-
- **Collaborative learning establishes an atmosphere of cooperation and helping;**
-
- **helps students learn how to criticize ideas rather than people; helps to model**

- **desirable social behaviors necessary for employment situations that utilize teams and groups;**
-
- **helps students practice modeling societal and work related roles;**
-

- **fosters team building and a team approach to problem solving while maintaining individual accountability; creates environments where students can practice**
- **building leadership skills; increases leadership skills of female students; develops learning communities;**
- **provides the foundation for developing learning communities within institutions and in courses; helps to promote social and academic relationships well beyond the classroom and individual course; and helps teachers**
- **change their roles from their being the focus of the teaching process to becoming facilitators of the learning process (they move from teacher-centered to student centered learning).**

Graham and Misanchuk (2003) have suggested that there are three general stages that

if using groups ,environment is to be successful:

- **creating the groups,**
- **structuring the learning activities, and**
- **facilitating group interactions**

Davis (1993) has supplied excellent solutions to a number of problems of collaborative learning,

broken down under the following headings:

- **general strategies,**
- **designing group work,**
- **organizing learning groups,**
- **evaluating group work,**
- **dealing with student and faculty concerns about group work, and**
- **setting up study teams**

forming teams,

- dealing with dysfunctional teams,
- grading,
- distance learning, and
- avoiding discouragement

Challenges for teachers

Salmon (2000) has suggested that in any computer-supported session, the instructor might need to be a chair, host, lecturer, tutor, facilitator, mediator of team debates, mentor, provocateur, observer, participant, co-learner, assistant, community organizer, or some combination of these!

This clearly points to the fact that the skills required on the part of the instructor are more complex and diverse than those required for a face-to-face lecture.

Thus, instructors need to be prepared for the different roles they will have to assume. In some cases, this may mean formalized training programs.

However, it is quite possible for collaborative learning to benefit all students.

It is often said by academics and instructors generally that the best way to learn a subject is to teach it, and for good reason – when teaching,

- **one needs to gain a thorough knowledge of the subject,**
- **not only to prepare material,**
- **but also to be able to answer questions confidently.**

No matter how good the preparation on the part of the instructor, further questions will almost inevitably arise during the course of instruction, thus leading to an even better understanding.

It seems naïve in the extreme to assume a similar process will not occur when the students themselves take on the unofficial role of instructors to other students within their group.

Assessment

- At the beginning of the course, the instructor randomly assigns students into groups.

- Each group is assigned one of the weekly topics and has to make a single online presentation. Students are assessed not just for their group's presentation but also for their comments about other presentations.
- Each group presentation is also assessed on the quality of the discussion that follows. Typically, by the end of semester,
- Students will have received over 100 inputs on their work from other students in the group, other groups, and the instructor.

- **In the last week of term, students are invited to submit a recommendation in writing on each other's group performance.**

- **The instructor considers any such recommendations**
- **when allocating individual marks for group performance to members of the group.**

- **A student who a group decides did not contribute sufficiently may suffer a reduction in mark as a result.**

- **Different assessment criteria may be used – for example, for the electronic presentation, clarity and structure of presentation, originality of ideas, and ability to substantiate arguments by relevant data;**

- **for other contributions, understanding the arguments that are made by other presenters, linking them to the relevant literature, and making pertinent critical comments about these arguments.**

- **The students' final marks are based on a combination of their group work throughout the semester and their performance in an end-of-semester examination.**

Online Group Projects:

- **Preparing instructors to prepare students to participate in online group projects is an important precursor to successful collaborative projects in computer-supported courses.**

- **Lesson modules developed in *"The Group Project Project"* provided instructors with specific guidance in applying techniques and teaching strategies for collaborative online projects.**

- **Interviews with instructors and students participating in online collaboration and group projects, as well as reviews of published research, were influential in determining the content of the instructor preparation modules.**

Student collaborative learning and the resulting learning communities are important elements in online teaching, both in principle and in practice. It is the vibrant sense of community of learners that makes successful online courses so rewarding for participants.

Group projects need to be considered in the overall instructional plan for usefulness, timeliness, and instructional quality. However, many instructors teaching

online classes are themselves new to online teaching and learning. They need guidance in setting up and delivering instruction for their students to fully engage in an online collaborative learning experience.

The Group Project

The Group Project incorporates theories and methods learned, and applies them to online lessons targeting instructors. The project focused on the development of lesson modules (or learning objects) that are intended to be used as part of a larger course.

These modules include guidelines and specific "how to's" for instructors, based on reported research in collaborative group projects in online learning.

These lessons are designed to prepare instructors to prepare students to participate in online group projects and to apply techniques and teaching strategies for collaborative learning to online group projects.

With this set of flexible instructional modules, the basic elements of online group projects can be passed on to instructors either individually or as a group.

These modules instruct faculty members on the theory and process for including group projects in their own online course work.

Preparation of instructors and students for online collaboration and group projects are critical to their success.

Student-Centered Learning

Student-centered learning requires active input from students and requires intellectual effort and aids retention.

Students must build their own knowledge through activities that engage them in active learning.

Effective learning happens when students take stock of what they already know and then move beyond it.

The role of the teacher in student centered learning is to facilitate the students' learning by providing a framework

(i.e., activities for students to complete) that facilitates their learning (Hiltz, 1993).

- Following the Constructivist Learning Approach, online group project activities are collaborative, conversational, intentional, and reflective (Lum, Mebius, & Wijekumar, 1999).

- Collaborative work, joint assignments, and learning resources shared among class members and the instructor are integrated (Mason, 1998).

- To succeed, students are self disciplined, intrinsically motivated, willing to learn, comfortable with basic technology, have access to a computer with an Internet connection and have adequate computing skills (McCormick & Jones, 1998).

The group will not have all the skills or knowledge necessary to complete the activities and will need to work through a series of trial and error attempts.

Experimenting is an important activity within the project. Depending on the skills within the group, the instructor may have to provide additional instruction or guidance or direction to ensure that the groups will be successful in bridging the knowledge gap before or during the project work.

Practicing skills through project activities ensures that learners have the opportunity to acquire knowledge and move toward the expected learning outcomes. The group work necessitates using and refining skills in many areas of group working, relationship building, and the specific content-related tasks.

Group project work usually involves some individual work and the synthesis of the group deliverable. In an online environment, these activities usually require reading and summarization of the source information. Using online communications -discussion, email, chat-requires students to engage in reading and summarization.

Depending on the project task, the depth of research and analysis can be extensive or relatively minor. Conducting research and analysis online is a natural extension of the project.

- **Articulating (writing, drawing) appropriate to the project should be included.**
-
- **Each student is required to contribute through articulation, informing, and, in some cases, persuading team members.**

- **Online, more forms of expression such as images, animation, video, audio, may be possible and encouraged.**

Instructional Approach

In online teaching and learning, technology can provide new and challenging avenues for addressing a variety of learning styles. It is important to strive for a balance of instructional methods.

Students can be taught in a manner they prefer, which leads to an increased comfort level and willingness to learn. Some learning in a less preferred manner provides practice and feedback in ways of thinking and solving problems.

Students may not initially be comfortable with this, but with practice, they will become more effective learners.

Teaching designed to address all dimensions on any of the models is likely to be effective (Felder, 1996).

While each learning style model has its advocates, all models lead to more or less the same instructional approach.

- **Traditional instruction focuses almost exclusively on formal presentation of material (lecturing),**
- **a style comfortable only for learners who prefer information presented in an organized, logical fashion and who benefit from time for reflection.**
- **To reach all types of learners, instruction should explain the relevance of each new topic, present the basic information and methods associated with the topic,**
- **provide opportunities for practice in the methods, and encourage exploration of applications**

- **Distance learning styles, or learning preferences, change over time and by situation (Diaz, 2002).**

- **Student characteristics change constantly.**

- **A model that continuously monitors student characteristics and determines which characteristics facilitate favourable outcomes is more appropriate than traditional static learning style models.**
-
- **This student- and learning-centered approach in educational practice can be accommodated in an online learning environment by providing information -student tracking, captured discussions, work products-for increasing faculty sensitivity to the individual learner**

Benefits of Group Projects in Online Collaborative Learning

There are significant benefits that can be derived from collaborative learning and project work (Tinzmann et al., 1990).

The principle benefits of group projects in online collaborative learning include but are not limited to: building self-esteem, reducing anxiety, encouraging understanding of diversity, fostering relationships, stimulating critical thinking, and developing skills needed in the workforce.

Building self-esteem is an important benefit of online collaboration and group project activities. Students are simultaneously working alone and in an intense community of learners. Students must develop and rely on their own efforts.

There is little opportunity to be swept along with the rest of the group.

There is no escaping the personal accountability.

By contributing to the group effort, students take personal credit for their role in the activity.

This visible effort is concrete evidence of participation and learning and contributes to building students' self-esteem.

The development of competency model

A competency may be considered to be based on subject matter knowledge and skill, contextualized with respect to particular situations or scenarios (Harzallah, Berio and Vernadat, 2006).

Competencies may be assembled and linked in a rich data structures. A competency may appear in more than one place in a competencies hierarchy.

Thus, it makes sense to capture the data model of competencies in some reusable form.

- **Description:** the general description of the competency.

- **Type:** type of trait that represents an aspect of the competency such as knowledge, skill, attitude, and so on.

- **Relationship:** relationship to other competencies such as “part-of”, “child competency”, and “parent competency”.

- **Proficiency level:** a measurement of the degree to which the competency has been achieved.

- **Measurement scale:** a scale that relates to proficiency level and weight.

- **Taxonomy:** a taxonomy reference for structuring competency data.

Evidence: facts or indicators about the achievement of a competency, such as test results and certificates.

- **Tools:** any tool(s) required to support reaching the competency.

Text -E Learning Standards.pdf
Page 22

• **User area:** Other data, such the description of a job position.
Page 23 *Table 1. A comparison of the capabilities of competency standards*
Page 25 *Figure 1. QTI version 2.0 processing (Wills et al., 2006)*
Page 26 Coding
Page 27 Figure 3. Competency model
Page 28 Figure 4. Architecture of the COMBA system
Page 29 Figure 5. Ontology of COMBA
Page 30 Figure 7. 'QTItools' player showing the test

Experimental Validation of Generated Questions

An experiment (Sitthisak, Gilbert and Davis, 2008) was carried out to demonstrate the acceptability of the generated questions from the competency model, exploring the following two questions:

- Were the generated questions semantically intelligible to an expert teacher of the domain?

- How did students rate the generated questions on the criteria of clarity, usefulness, challenge, and match with the learning outcomes?

Learner management in e-Learning Page 500

Educational institutions and corporate bodies are turning to e-Learning primarily because it has capabilities to effectively impact a larger community for the least amount of investment and expense.

Secondarily, it is contributing to an increase in retention and recruitment.

To fully apprehend the results of e-Learning, it is important to examine the systems of learning available, how to manage them, and how they can be integrated with other learning environments.

Example **www.electricaldiploma2013.zoomshare.com**

Study option 1/2/3

In TAFE college where I am teaching, there are different categories of students. Some can attend the classes during the day times, some from the industries can only attend at night & some from remote areas can not attend the face to face classes.

I develop the teaching strategies to teach the face to face classes as well as flexible online/ off line learning.
I establish the learning support website

www.electricaldiploma2013.zoomshare.com
Advanced Diploma in Electrical Engineering & Technology Home.htm & plan three types of learning strategies

Study Option 1.

The students will study the lessons by downloading them from the link

Click HERE

http://www.filefactory.com/file/58jjdqiek18z/Study_Option%201.htm

Password—joe2013

The face to face class lessons are recorded in digital note takers and digitized.

The students learn the topics of the lessons, do the exercises and submit the assignments.

By this way, the same level of learning as to face to face class can be obtained.

Study Option 2

Study option 1 is suitable for the students who have not learnt the lessons before.

But some students prefer their own study & want to do self paced assignment projects. For those, I design the study option 2 webpage in which the textbooks/ reference books are uploaded & linked.

The students can study those resources , do the project assignments and submit them. It is more suitable for the matured aged students with industrial experiences.

The link can be accessed at
Click EE011 +1790817794.Zoomshare.com
http://www.filefactory.com/file/551mzcdoav8p/1790817794zoomshare.htm Password—joe2013

Study Option 3

It is a video version of lesson delivery. The same classroom demonstration can be viewed. The students who attend the face to face class or who view the lesson demonstration will then be assessed by test/ examinations.

youtubevideos.htm

Practical

Practical delivery is also designed with both face to face and online mode.

For online mode, the students can study and do the engineering practicals from the following link.

youtubevideos.htm

Thus, merging the two areas, functions in LMS will include:

• Managing facilities, users, courses, instructors, roles, and generating reports,

• A Course calendar outlining the timelines for course or assignment,

• A Learning Path or the means of identifying how the student and faculty will complete
the knowledge and other competencies,

• Student messaging and notifications,

- Assessment/testing capable of handling student pre/post testing,

- Display scores and transcripts,

- Grading of coursework and roster processing, including wait listing,

- Web-based or blended course delivery.

Characteristics more specific to corporate learning, which sometimes includes franchisees or other business partners, includes:

- Autoenrollment (enrolling Students in courses by predefined criteria),

- Administrator/Manager enrollment and approval,

- Definitions for prerequisites or equivalencies (generally boolean),

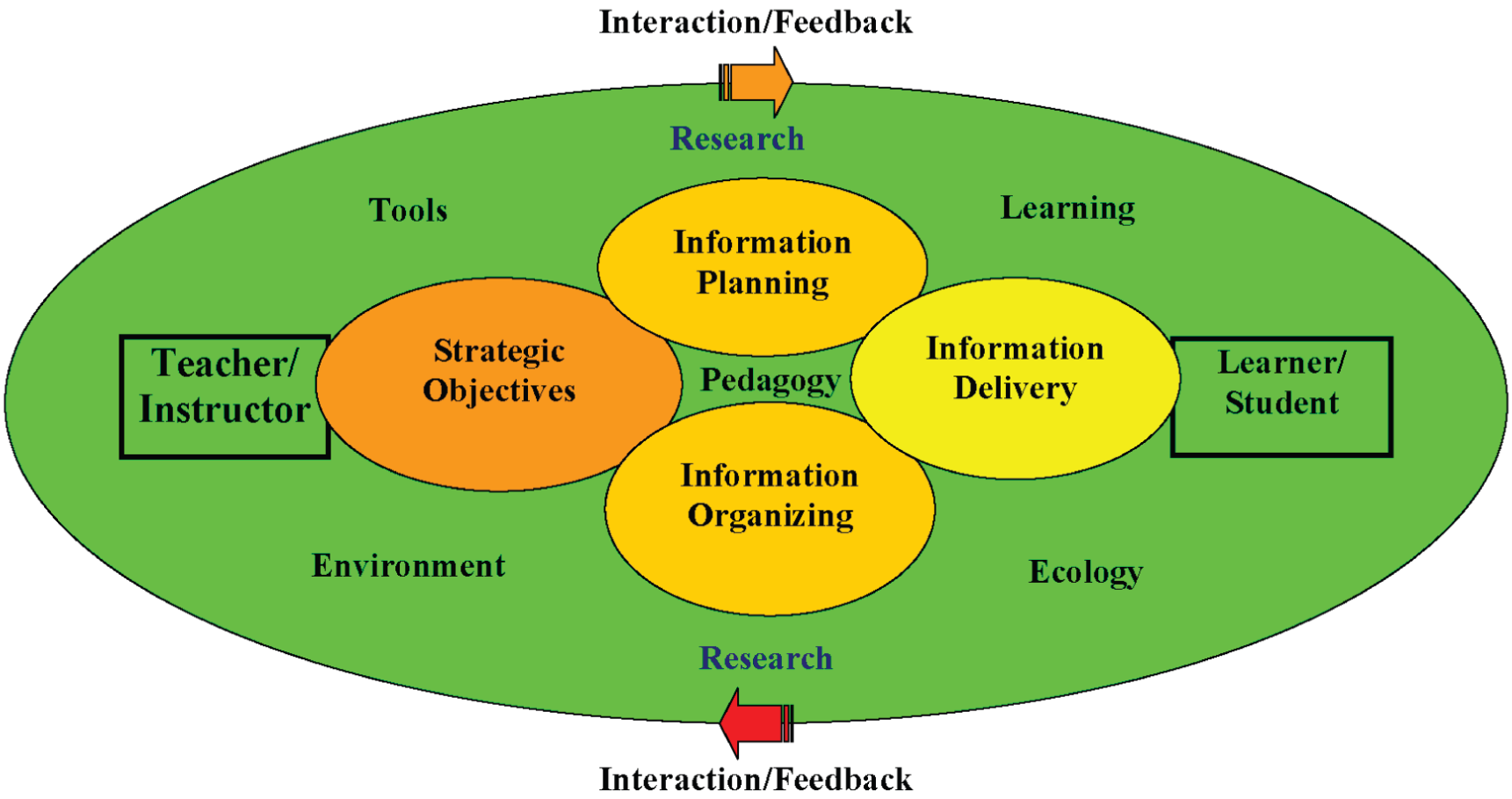
- Integration with performance tracking and management systems,

Planning tools to identify skill gaps at departmental and individual level,

• Curriculum, required and elective training requirements at an individual and organizational level,

• Grouping students according to demographic units (geographic region, product line, business size, etc.),

• Assign corporate and partner employees to more than one job title at more than one demographic unit.


Interaction/Feedback
Research
Tools
Learning
Information Planning
Teacher/ Instructor
Strategic Objectives
Pedagogy
Information Delivery
Learner/ Student
Information Organizing
Environment
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Research
Interaction/Feedback

Overview of traditional,
Non E-based Pedagogy

Principles of teaching have been traditionally established in methods of instruction for a while and extensively researched. According to Meyen et al (2002), pedagogy includes teaching methods related to the following

a. presentation of experiences,
b. engagement of learners,
c. reinforcement,
d. motivation,
e. organization of teaching tasks,
f. feedback,
g. evaluation, and
h. curriculum integration

Overview of E-based Pedagogy

According to Meyen et al (2002), e-Learning is a form of pedagogy, and the effectiveness of pedagogical practices can be measured.

A knowledge base of pedagogical practices has evolved over time and is currently still a work in progress

Examples include practices related to communication, assessment, instructional design and mediation.

Traditional/classical and E-Learning systems

In both systems, the themes are the same and the players have been stable. What has changed is that the traditional environment more strongly emphasizes a hierarchical structure for learning with the teacher controlling the environment, and a more limited social environmental learning.

However, because classical learning also includes limited space (in distance and time) for physical contact, it also has some social learning environments.

This is in contrast to the virtual environment where several learning processes may be simultaneously engaged in several private spaces that may include two or more people.

Thus the “hubbub” of the communication environment can be “controlled” for more private interactions without the other learning “relationships” being aware of the exchanges in the virtual spaces.

However, the virtual environment lacks the physical interactions of the real environment, thus the avenues for information transmission to all the senses is currently limited.

five-phase implementation strategy

labeled *initiating*, *discovering*, *envisioning*, *actioning* and *sustaining*.

with four key theoretical concepts: metastrategy (Limerick et al. 1998); appreciative inquiry (Cooperrider and Whitney 1996); action learning (Argyris and Schon 1996;Kolb 1984; Zuber-Skerrit 1990) and organizational capacity building

Technology in the resource Poor Environment

Technology and creativity in e-Learning can help compensate for and overcome levels of resource poverty.

The virtual environment allows and encourages students to initiate their learning.

The instructor/teacher's role becomes more supportive, flexible and responsive, to meet and address the student's requirements while the instructor also expands his/her repertoire of tools and competencies.

By learning and implementing new skills, teachers can introduce new approaches such as multimedia course design, tutoring, managing collaborative work groups, problem-based learning, product development or any emerging technologies to encompass new teaching and learning in contrast to traditional teaching methods.

This high quality, effective and efficient learning process for both students and teachers can be brought about by improved teacher training

To make pedagogy effective, teachers can design and develop courses (FGCU 2006, Athabascau 2004, Illinois Online Network 2007) of interest and make them available on-line for communicating with the student remotely.

The design must incorporate necessary skills for understanding – conceptual, cognitive, psychometric, and attitudinal, among others – knowledge, skills and competence transfer

The Use of blended Learning Approaches to Address specific resource Needs

In e-Learning, the terms blended learning and hybrid courses are synonymously used to refer to a combination or integration of face-to-face class room instruction with online instruction (Graham 2005).

Blended learning incorporates the best features of the two learning approaches.

Regardless of whether the environment is resource rich or resource poor, the blended learning helps to bridge gaps in learning.

Learners will have face-to-face instruction, a wealth of learning activities available online for independent learning, and reduce drawbacks in resources for class instruction and time

In resource poor environments, it is necessary to assess the level of blending required based on the resource needs available for class room and online instruction. If the quality of instructors, buildings, or space is a limitation, then online instruction makes a greater contribution and has greater weight; but a balance is more critical to the learner's needs.

Blending is an ongoing process and evolves with time, until effective delivery of instruction is attained for both instructor and learner.

The reduction of class room time will also help retain students who are limited by other constraints such as transportation, family responsibilities, occupation, and/or being otherwise engaged.

Blended learning allows students to make up for class hours with online instruction available for them to study at their own pace and style.

Blended learning also provides more options for the teacher to manage and organize course curriculum.

Online instruction can be used to deliver a major portion of course contents, while class room instruction can be utilized for discussing difficult aspects of learning or for problem solving (Doo & Seung 2008).

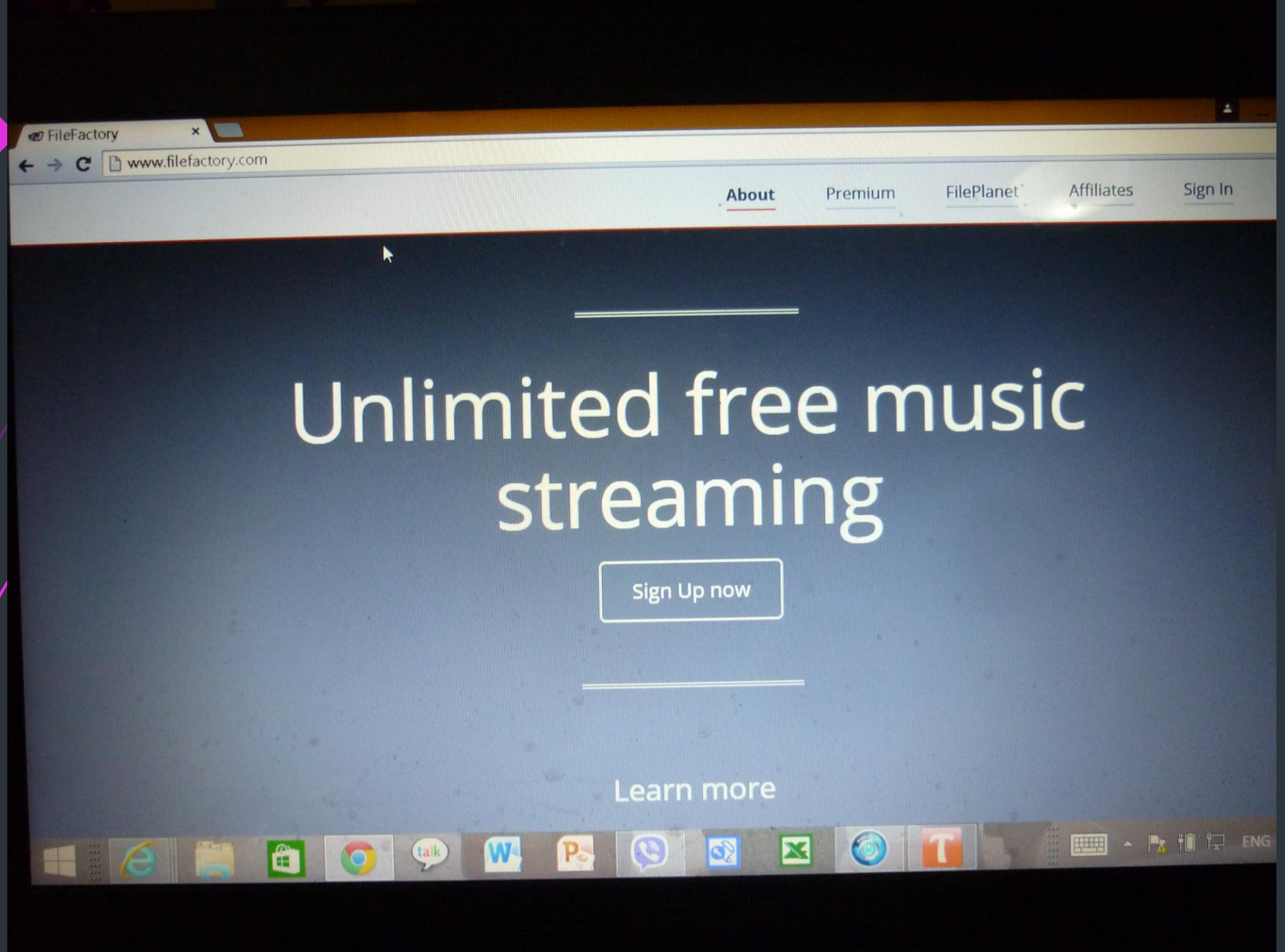
The blended learning environment puts greater responsibility on the instructor to design the course to address the needs of the learner based on the best pedagogy applicable to the student.

LMS may help to monitor and track student performance, and throw light on blended instruction effectiveness.

Making online lessons

Uploading the lessons to file sharing sites

www.filefactory.com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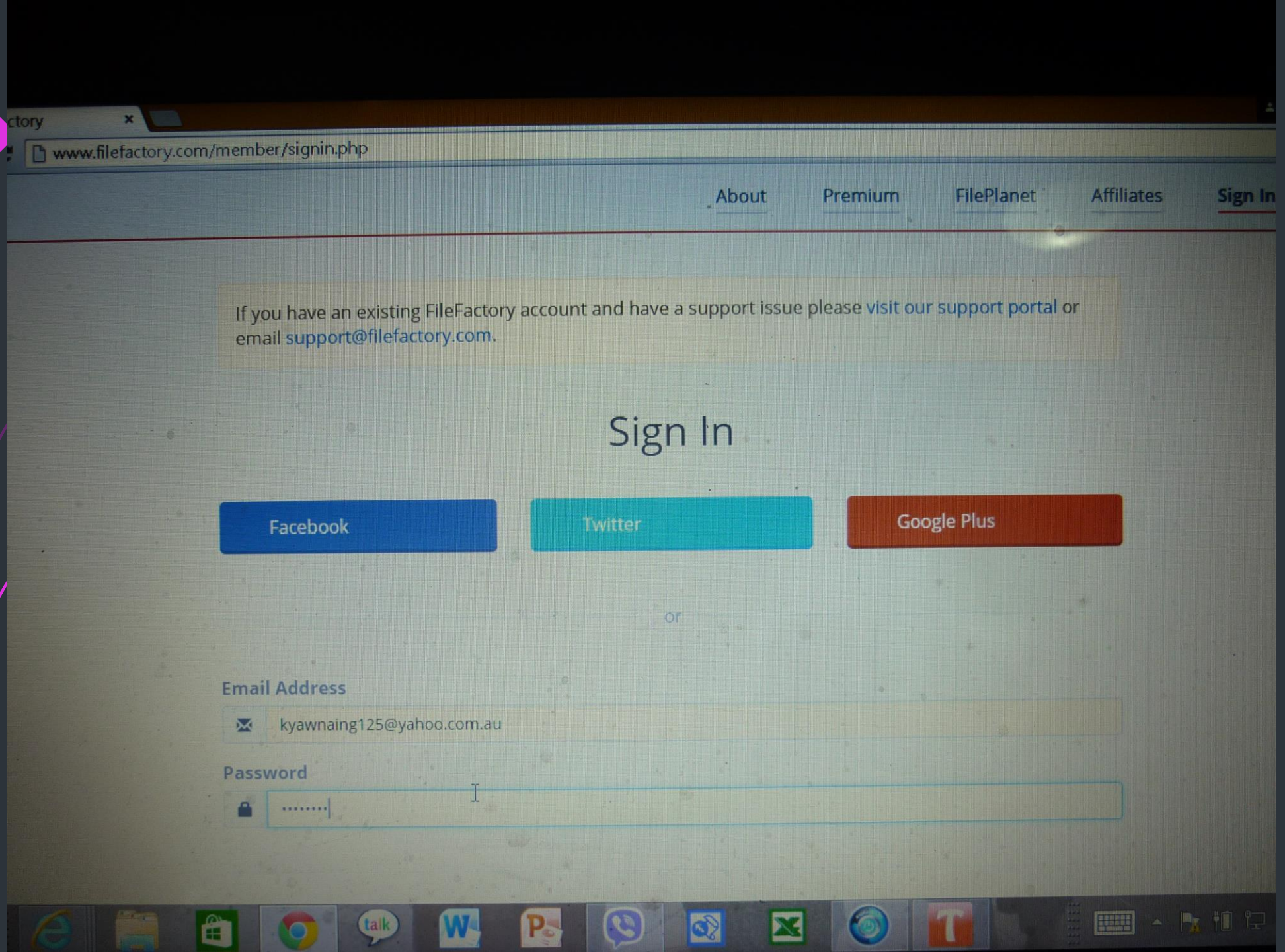
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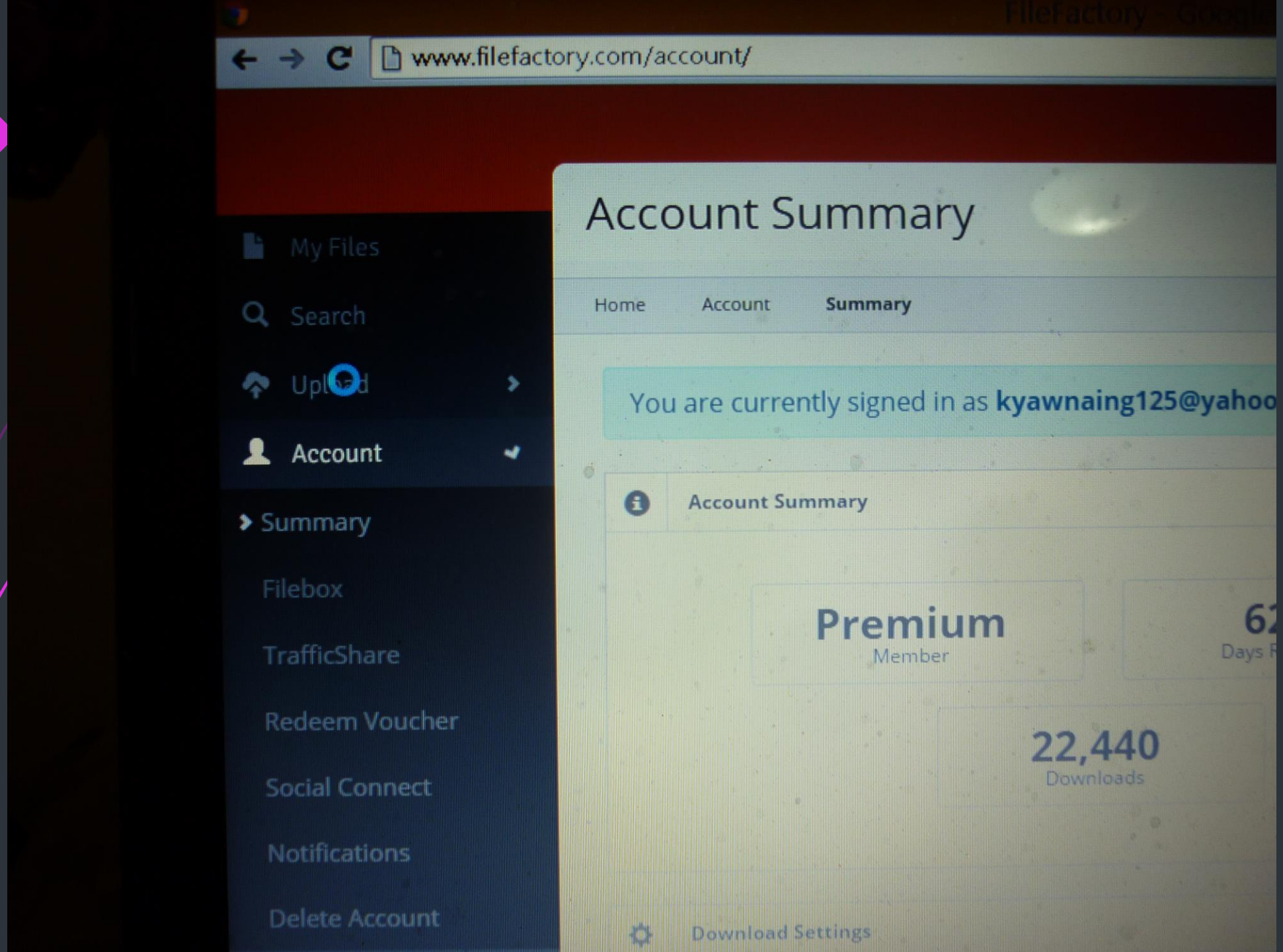
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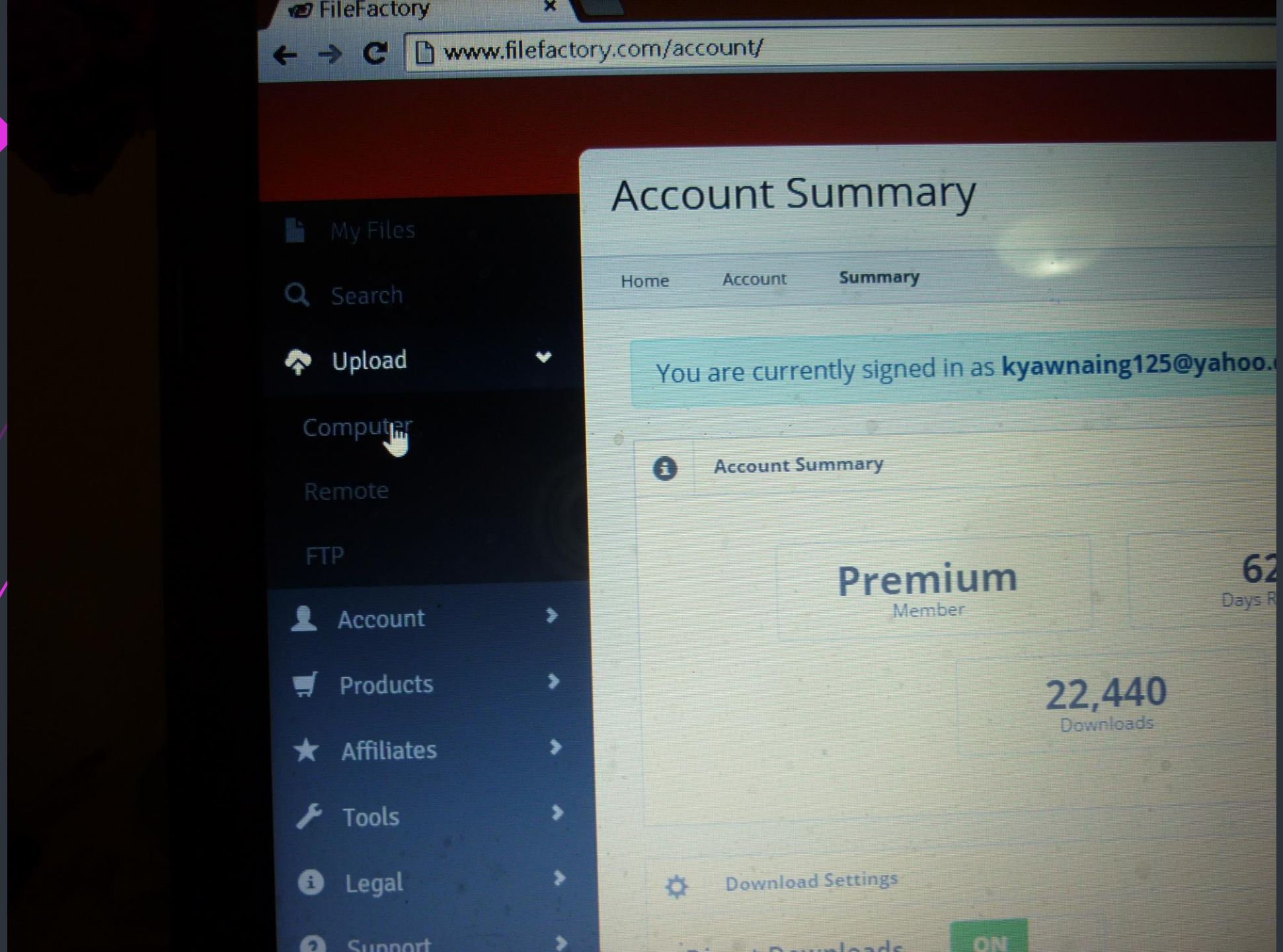
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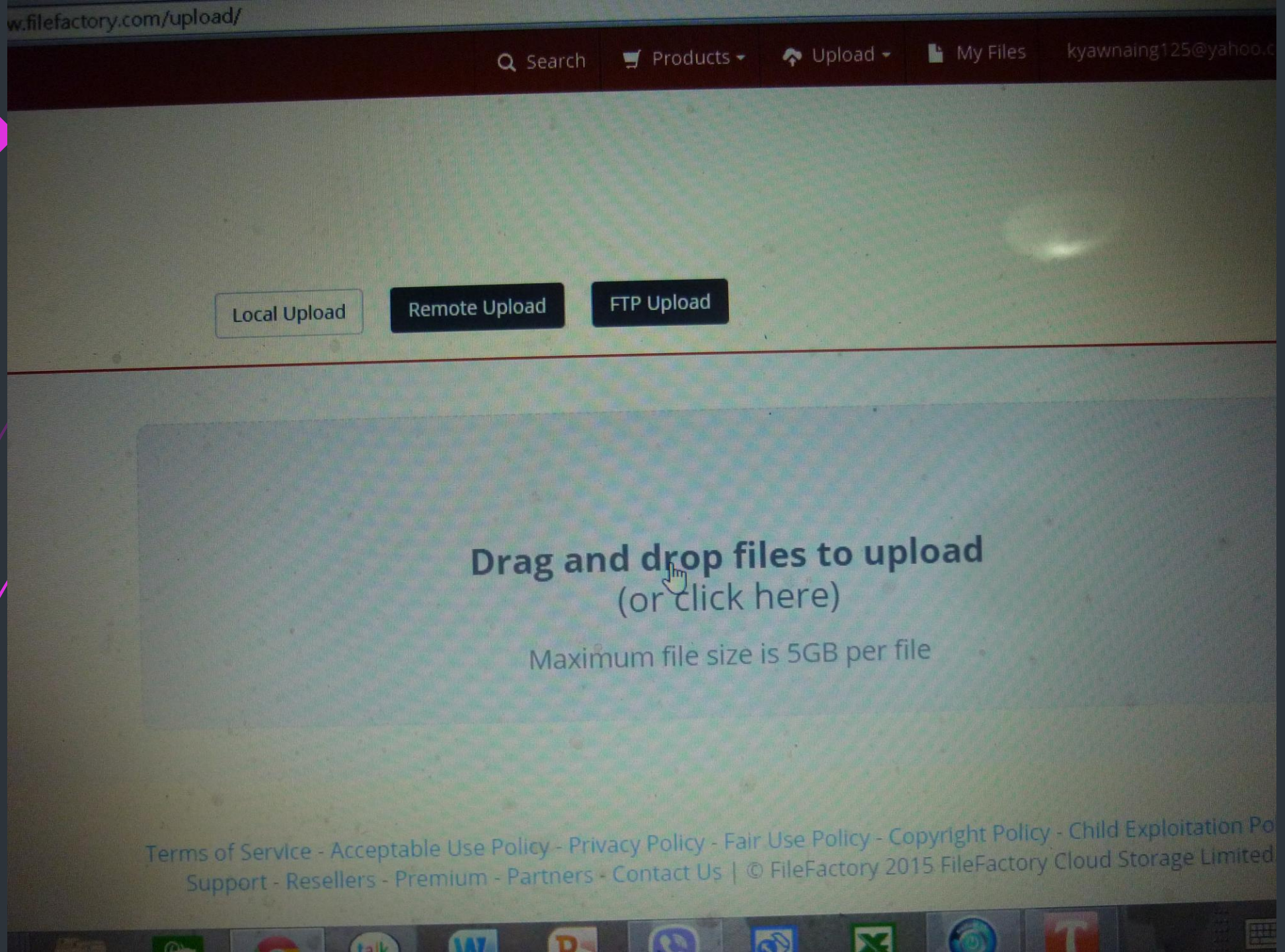
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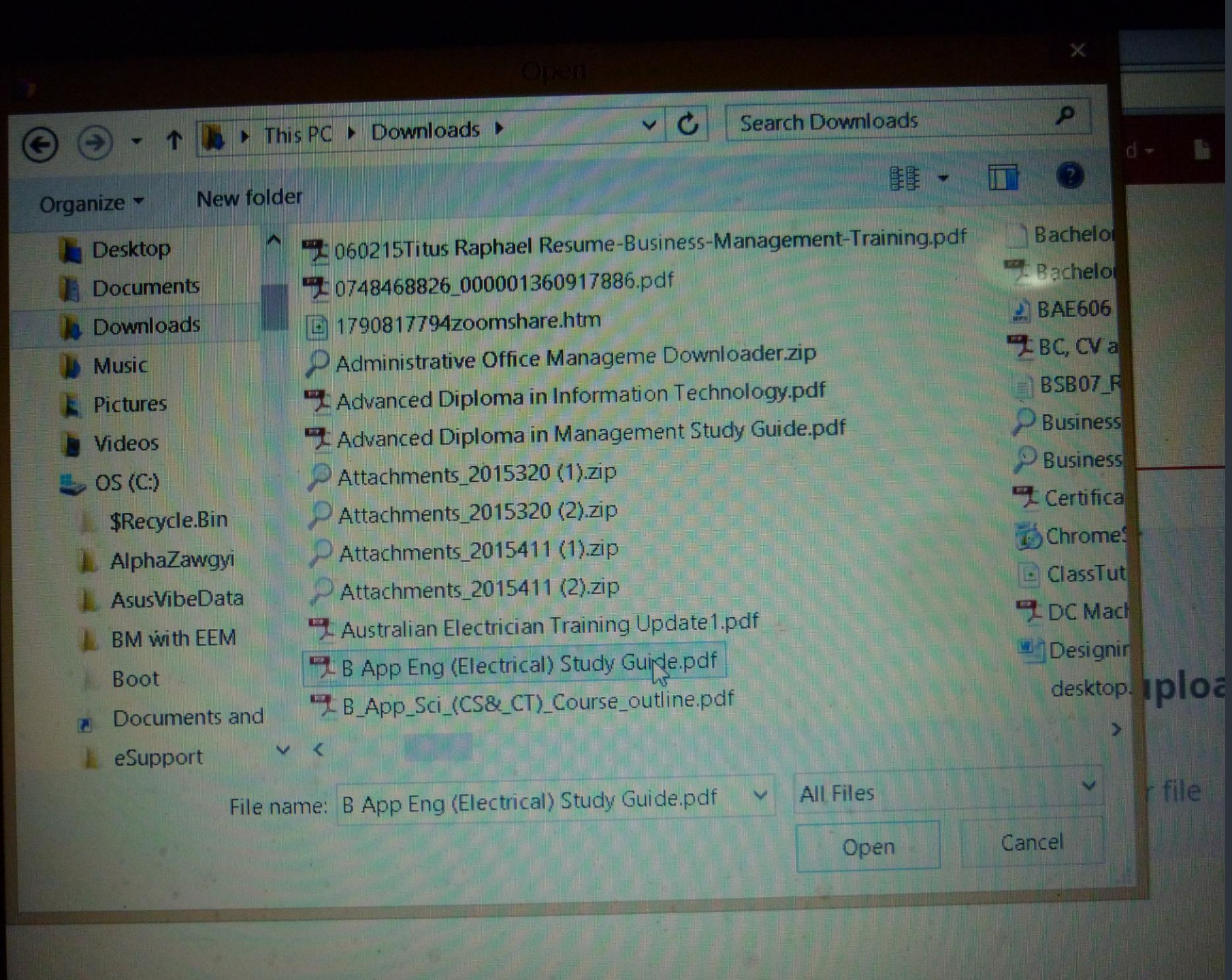
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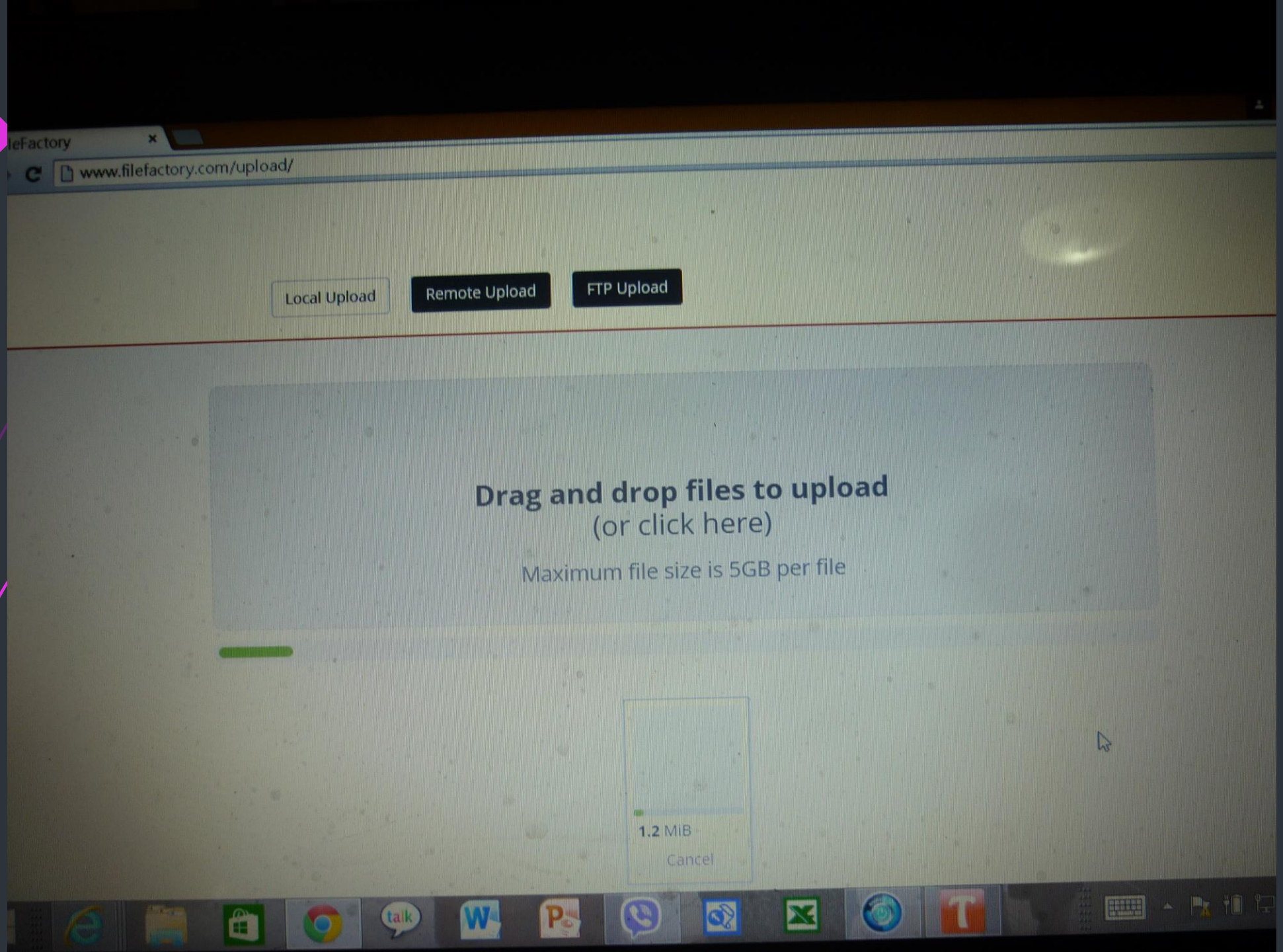
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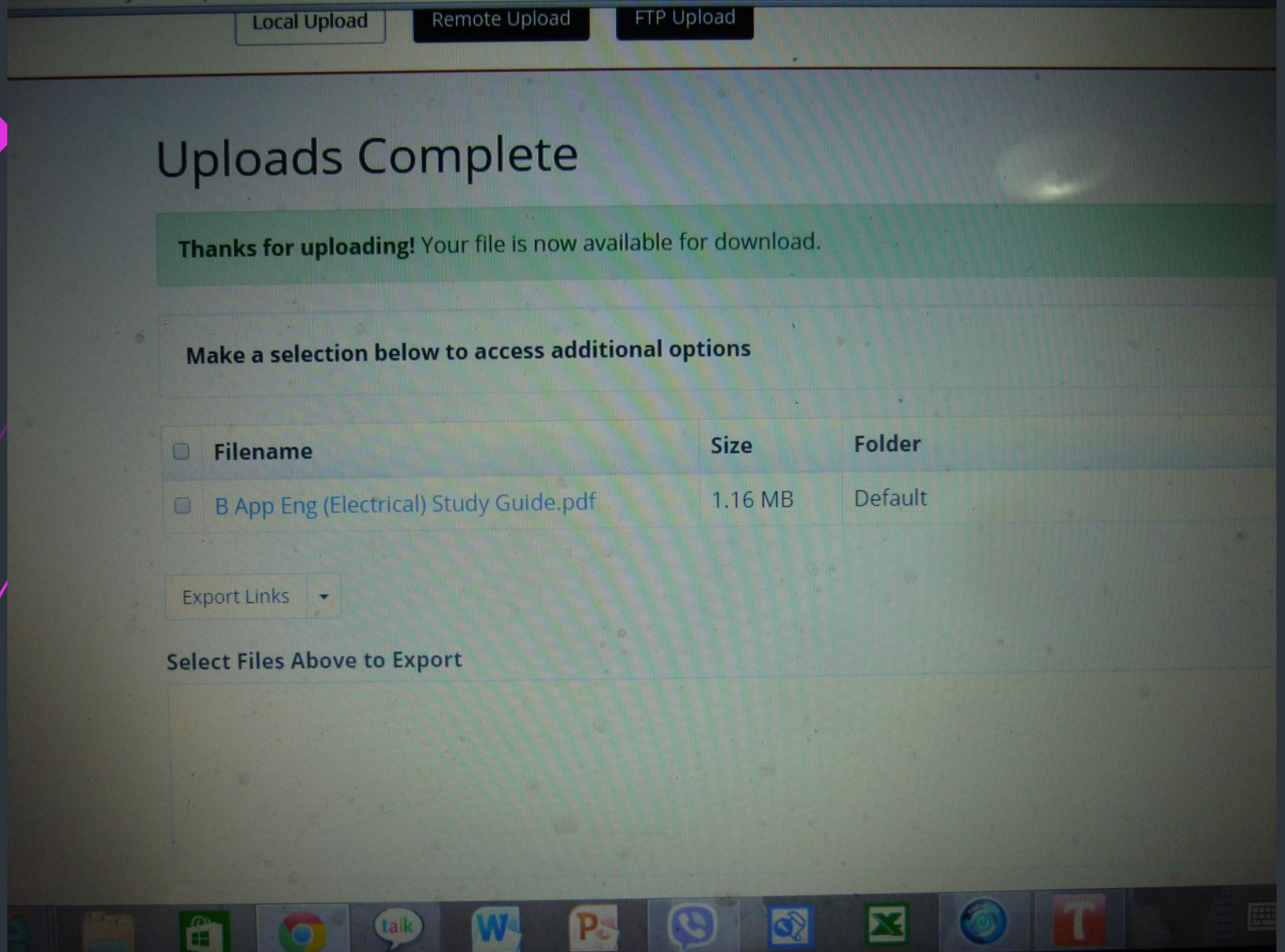
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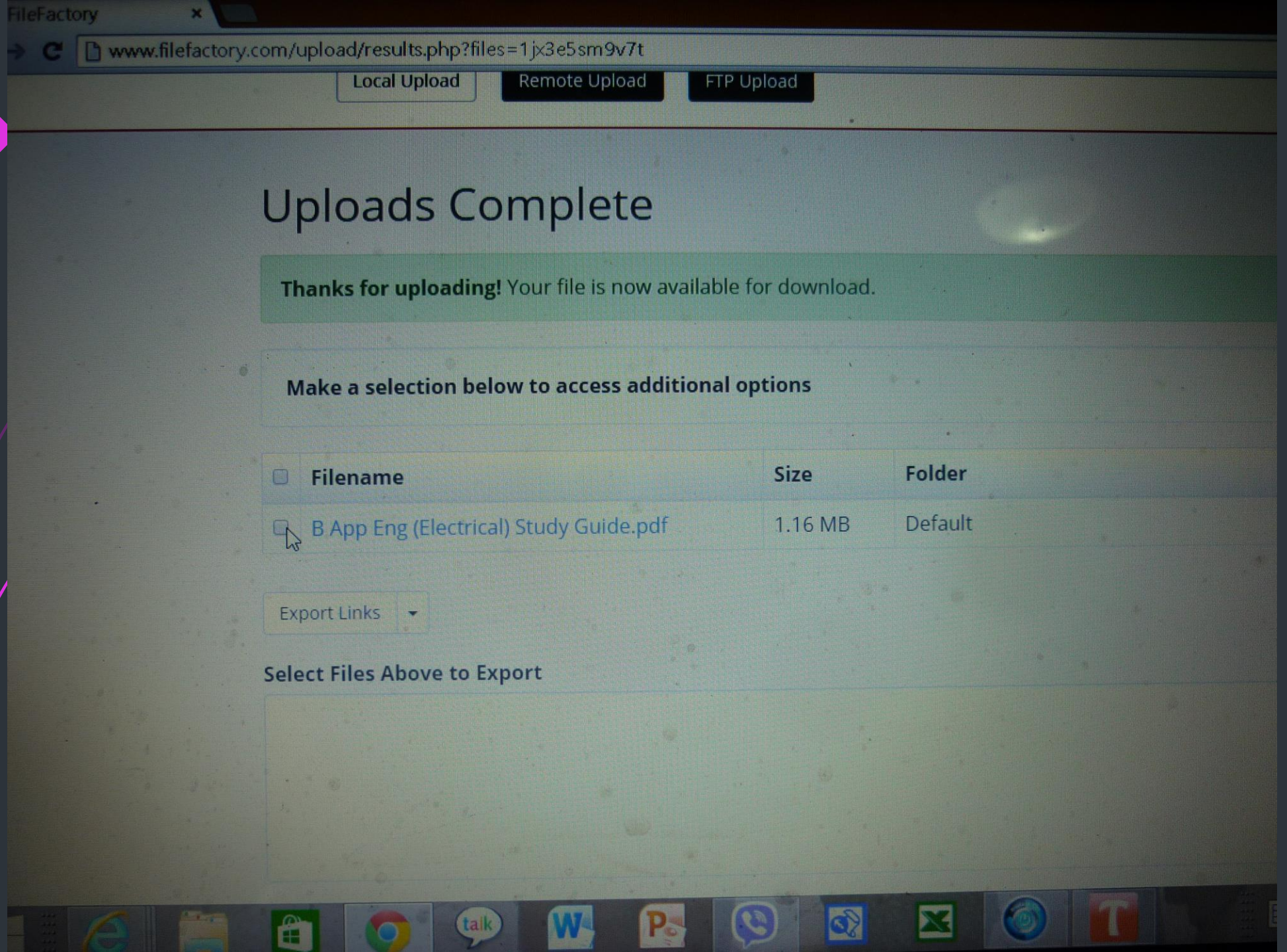
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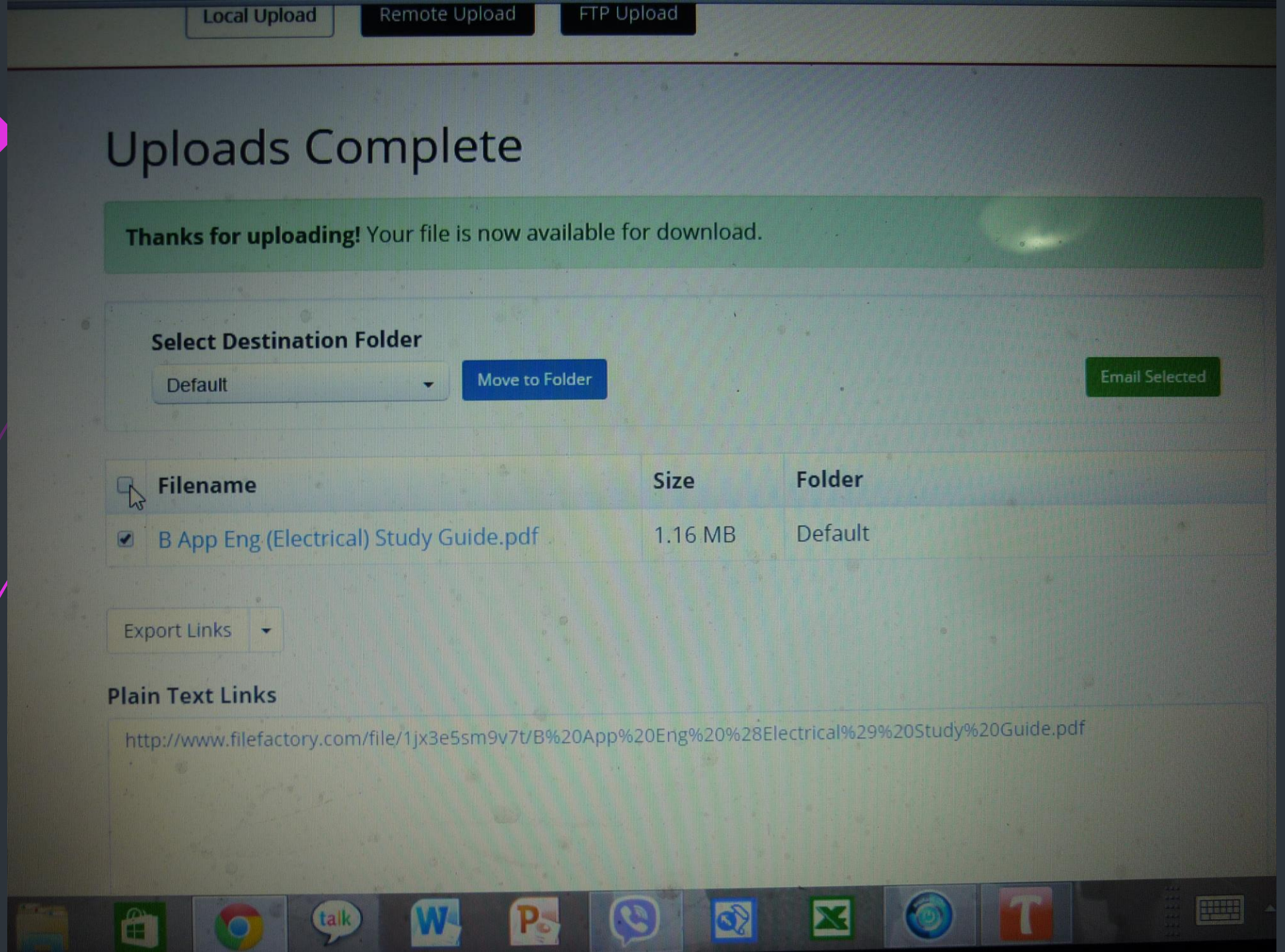
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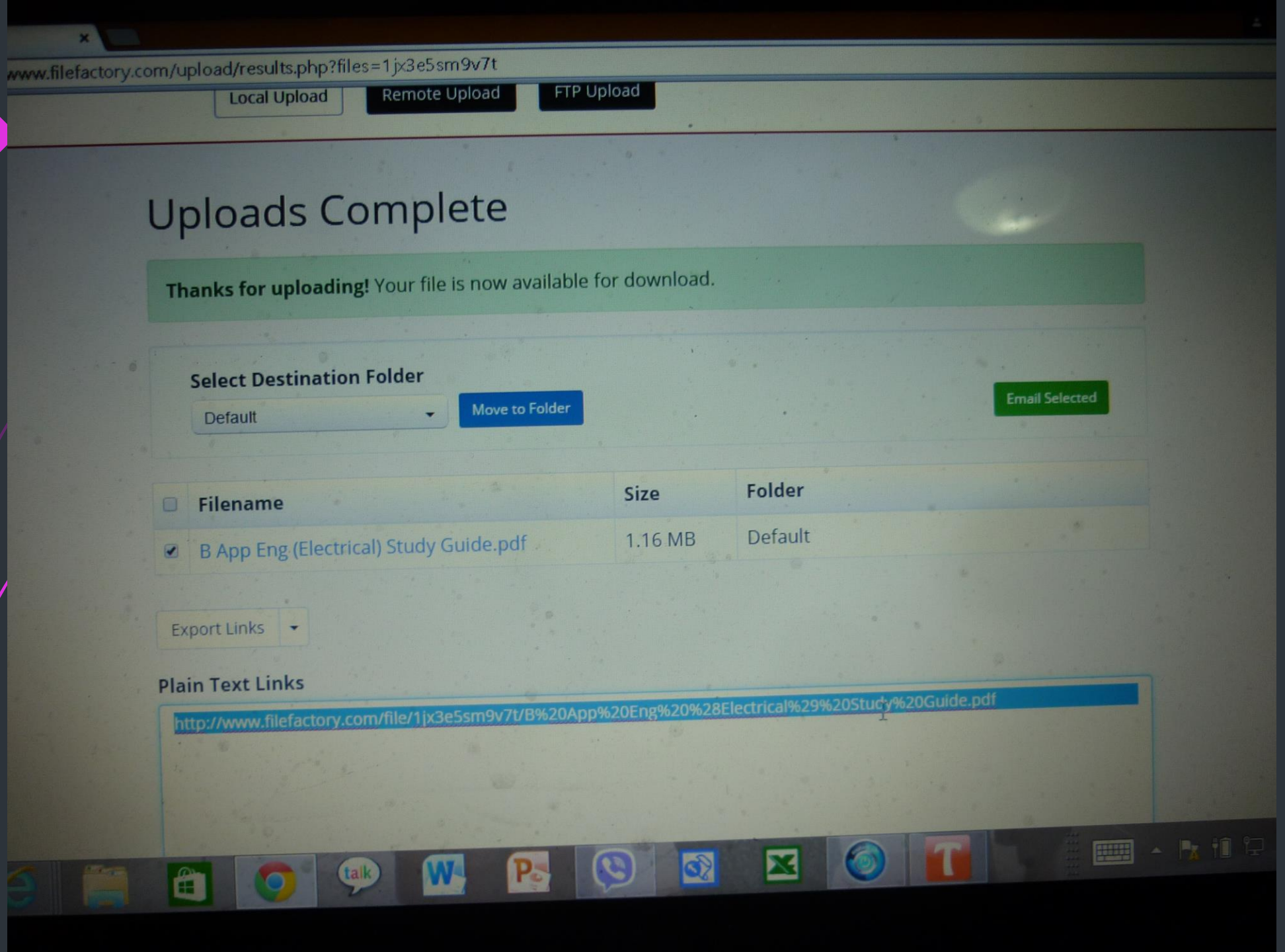
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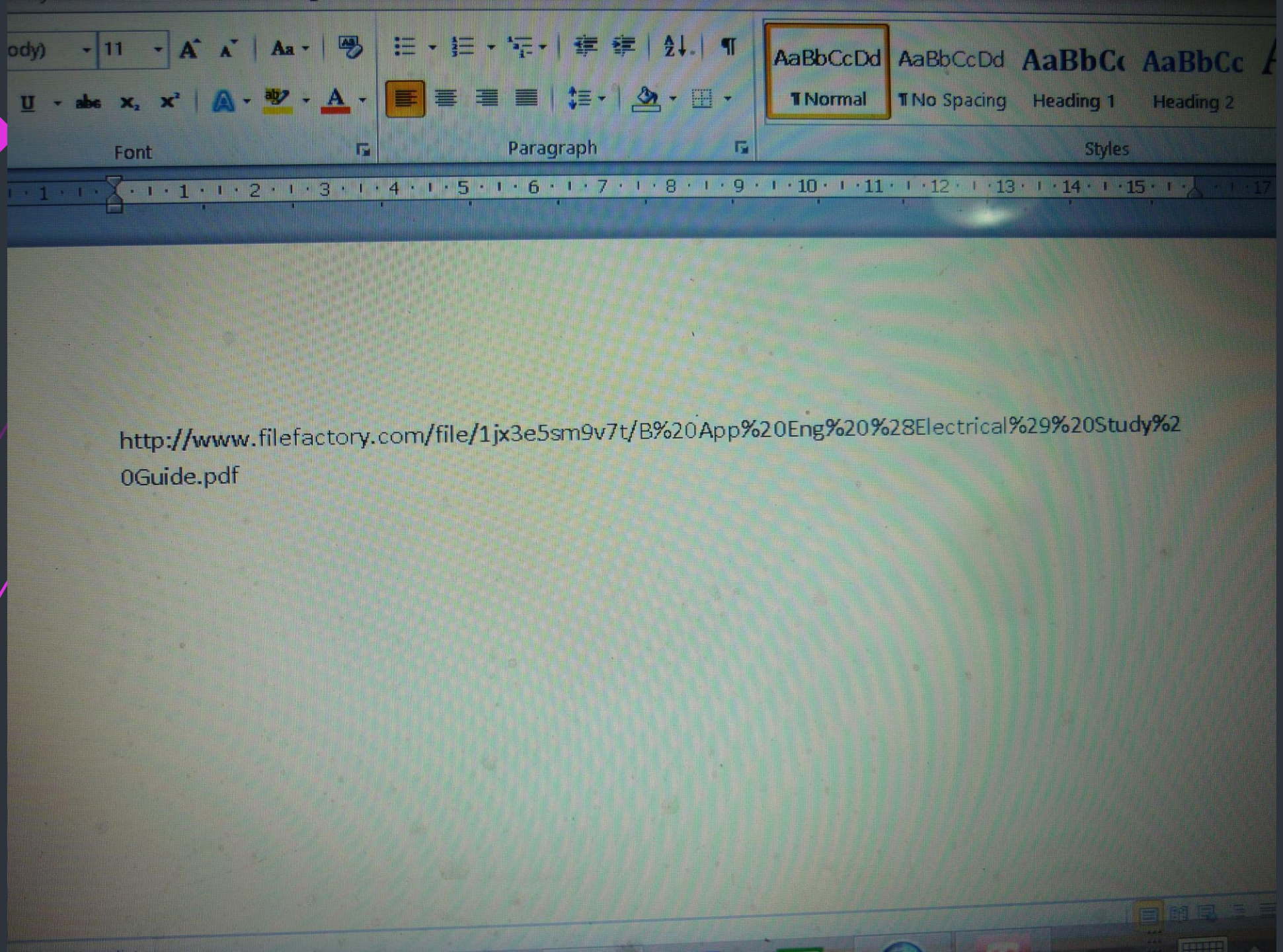
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Use the link & then create the learning platform

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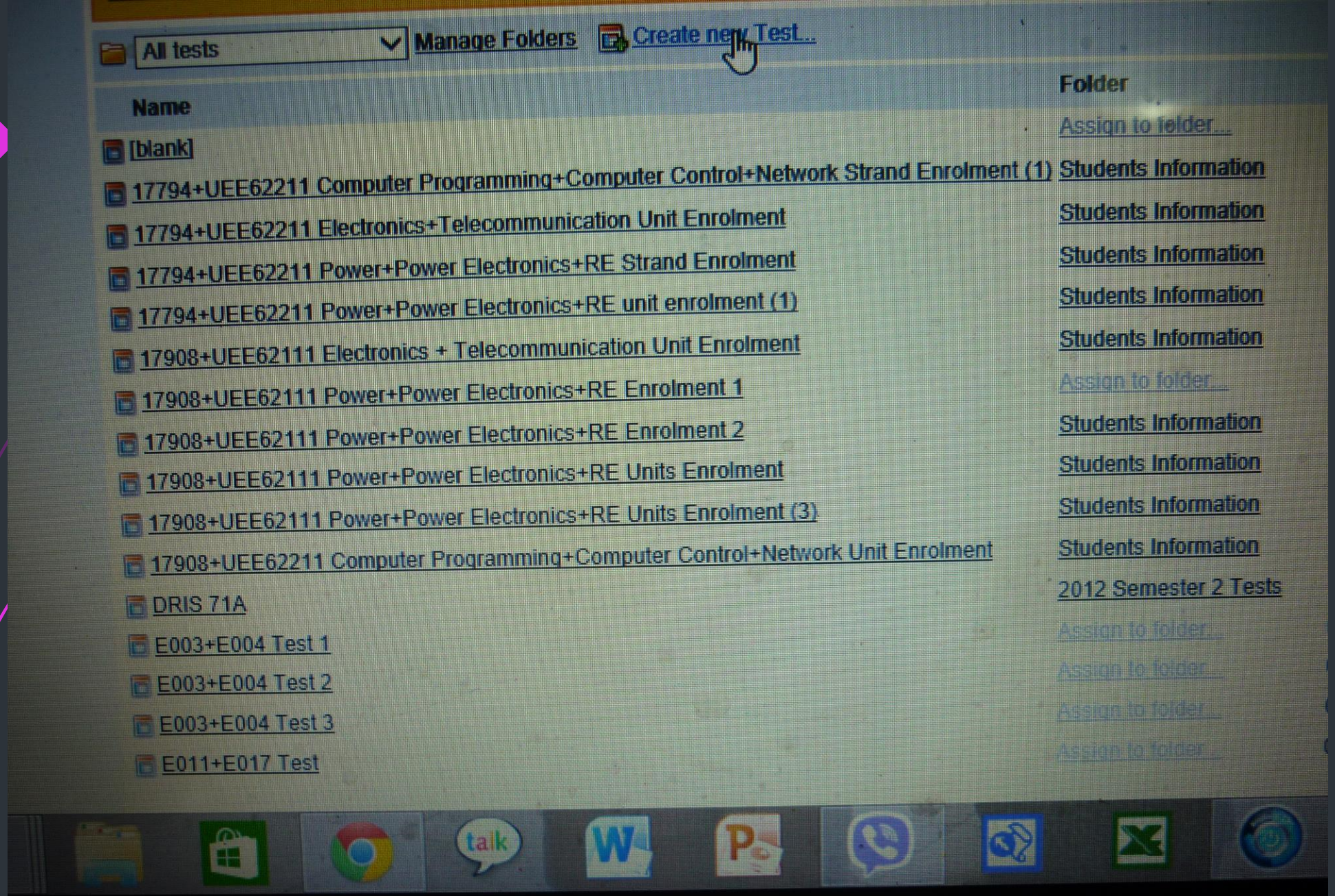
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E003+E004 Test 3
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E011+E017 Test
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G042-Transmission Lines Test—Semester 2-2012

Question Paper-Click G042 Test Question Paper

http://www.filefactory.com/file/12pcsbpgbkhx/n/G042_Online_Test_1_Question_pdf

Answer sheet- Click G042 Test Answer Sheet

http://www.classroomclipboard.com/503511/Home/Test/047fd1ce1bc44929a6a97aefef738ac9#/InitializeTest.xaml

First Name - TAFE-ID Number

Surname - Your full name

Access Code-- 2WKNN33

G042 Online Test

Ref352

Circuit breaker is

A	To cut off the circuit when fault occurs	B	To cool the arc after disconnecting the circuit
C	To reclose the switch	D	All above
	Answer		

Ref354

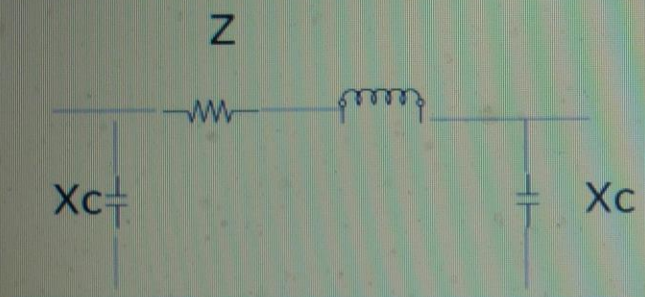
Find the input impedance and VSWR of a transmission line 4.3λ long when Zo=100Ω & Z2=200-j150Ω

A	1+j2 Ω, 0.592 λ	B	2-j1.5 Ω, 0.592 λ
C	3+j4 Ω, 1.6 λ	D	3-j4 Ω, 3.6 λ

j150Ω

A	1+j2 Ω, 0.592 λ	B	2-j1.5 Ω, 0.592 λ
C	3+j4 Ω, 1.6 λ	D	3-j4 Ω, 3.6 λ
	Answer		

Ref356



Z = 13+ j 92.6 Ω, Xc= -j2700 Ω

Find A, B, C, D constants

A	A=1.8, B= 180, C =0.0007, D= 1.8	B	A=2, B= 360, C =0.0012, D= 2
C	A=3, B= 400, C =0.015, D= 5	D	A=0.967, B= 93.5, C =0.0007, D=0.967
	Answer		

Ref358

A 50Ω transmission line is connected to a load impedance 75+j60Ω. The forward wave voltage RMS value on line is 25V. Calculate

(a) Power delivered to resistive part of load impedance

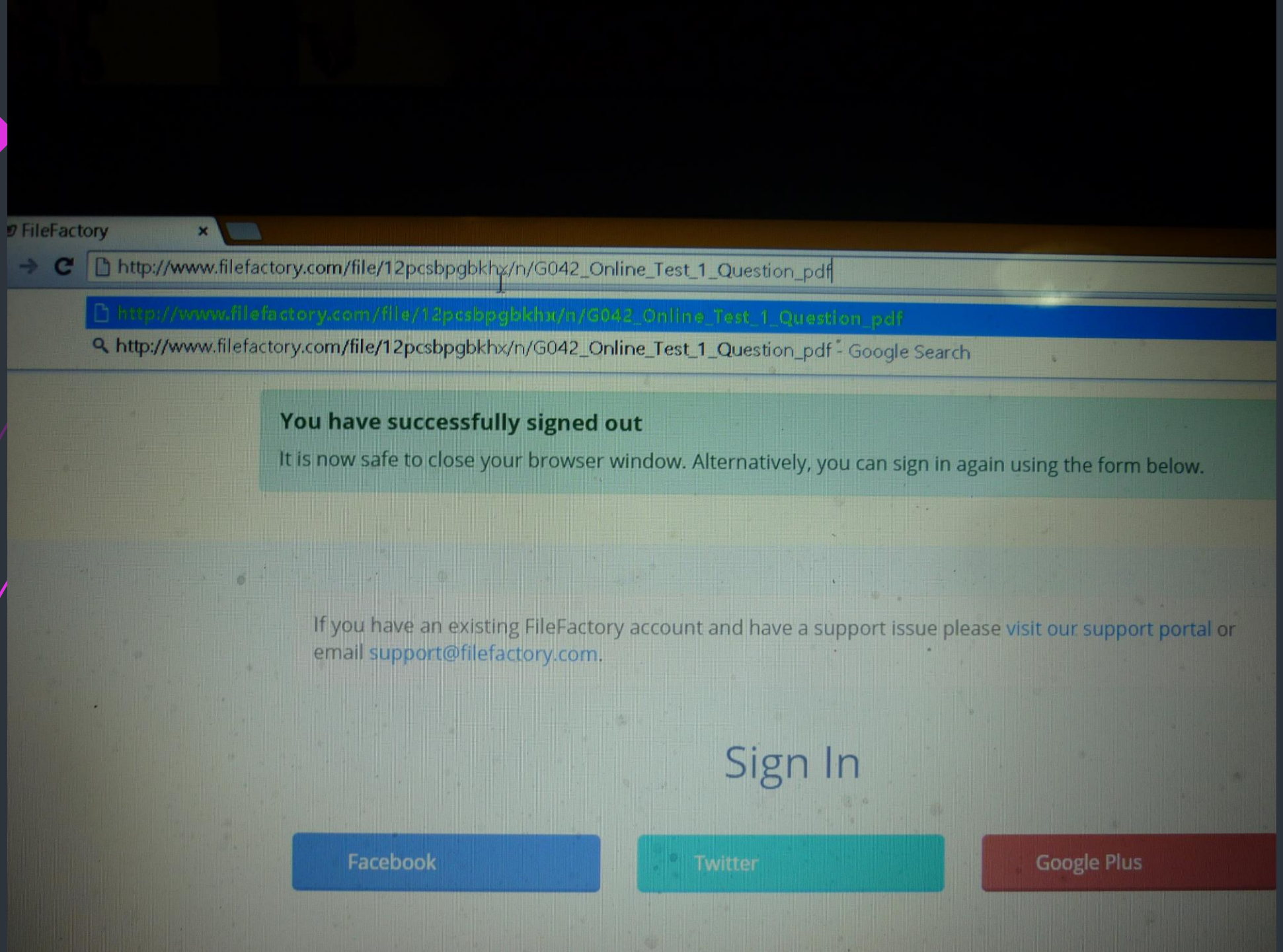
(b) RMS current in impedance reflected wave voltage RMS size

(c) Peak voltage , forward and backward waves

(d) Voltage standing wave ratio (VSWR)

(e) Return loss in decibel

A	12.5W, 0.101A, 35.6V, 16.57V, 2.764,4.4dB	B	25W, 0.38A, 70V, 32V, 5.3,8.8dB
C	5W, 0.39A, 70V, 16V, 3, 4dB	D	25W, 0.38A, 40V, 32V, 2.764,4.4dB
	Answer		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You have successfully signed out
It is now safe to close your browser window. Alternatively, you can sign in again using the form below.
If you have an existing FileFactory account and have a support issue please visit our support portal or email support@filefactory.com.
Sign In
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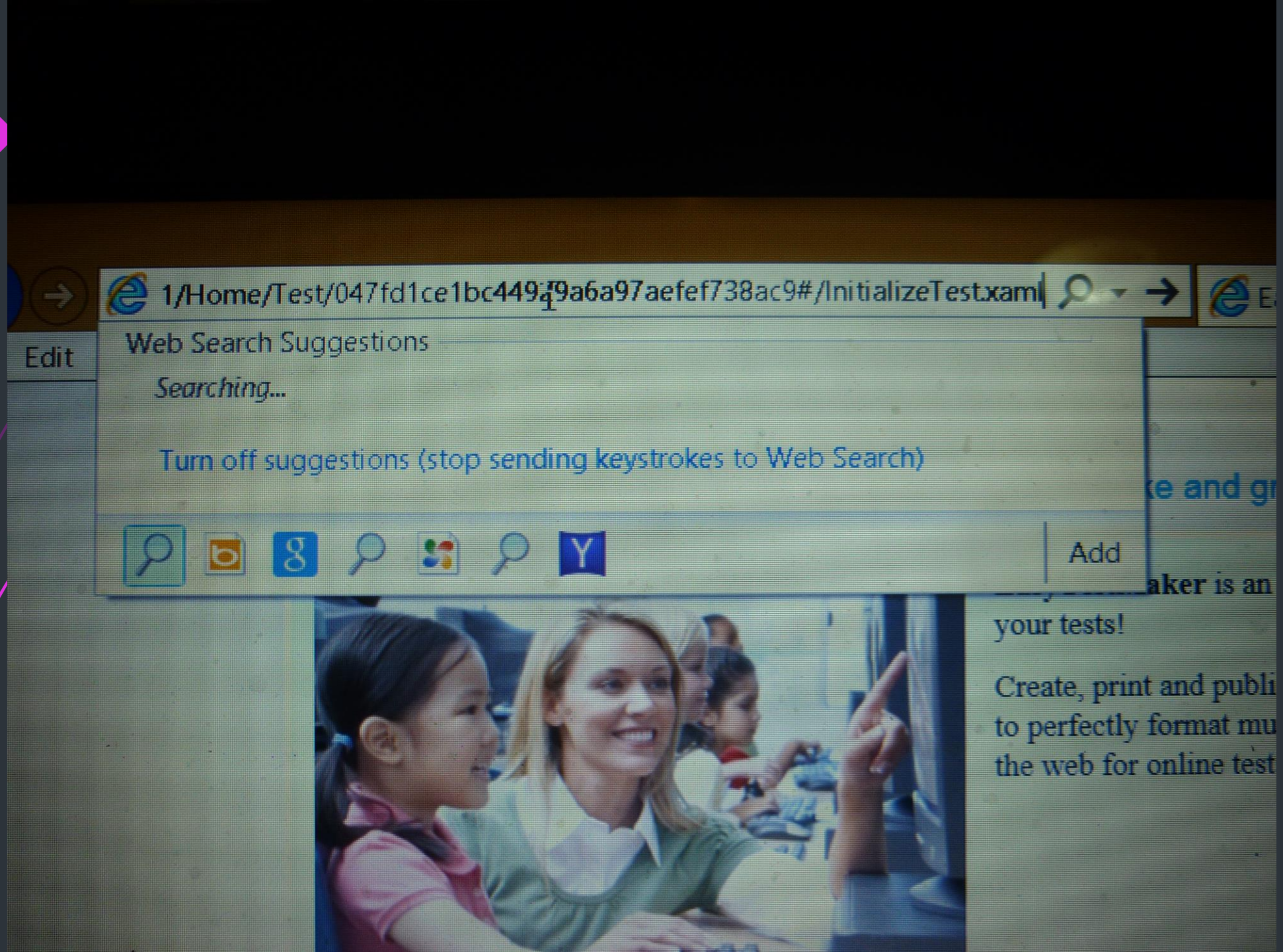
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Turn off suggestions (stop sending keystrokes to Web Search)
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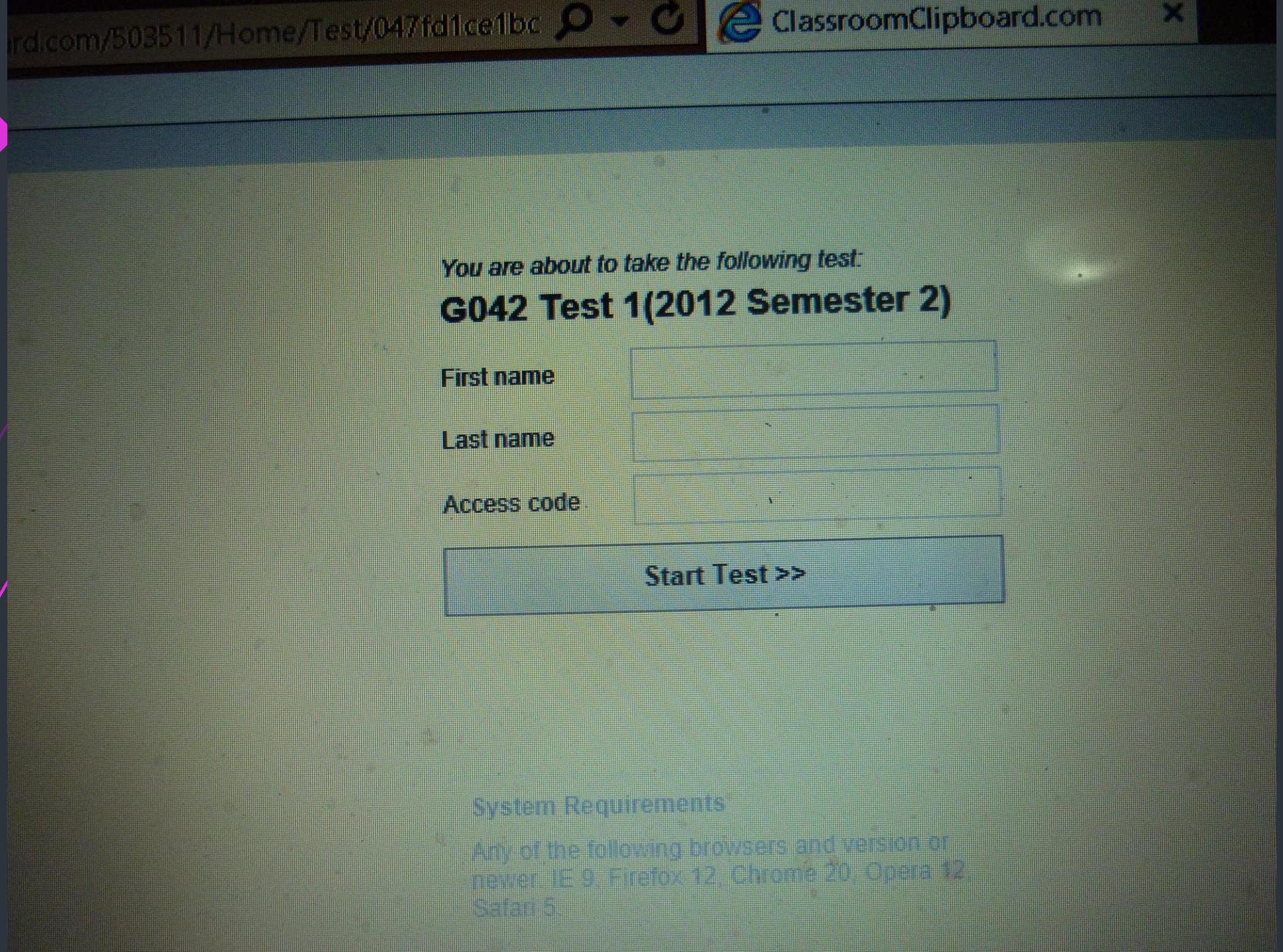
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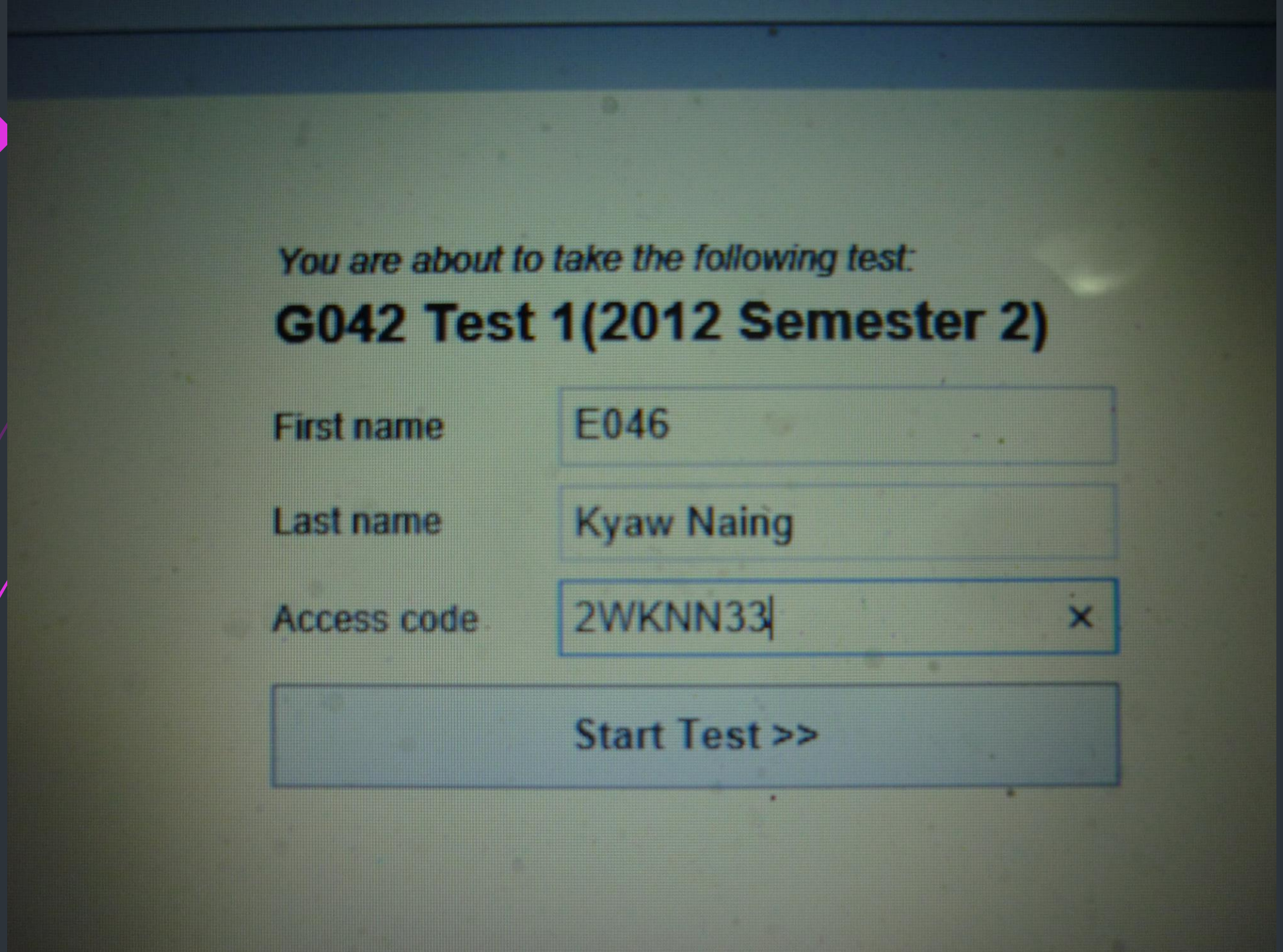
ClassroomClipboard.com
You are about to take the following test:
G042 Test 1(2012 Semester 2)
First name
Last name
Access code
Start Test >>
System Requirements
Any of the following browsers and version or newer. IE 9, Firefox 12, Chrome 20, Opera 12, Safari 5.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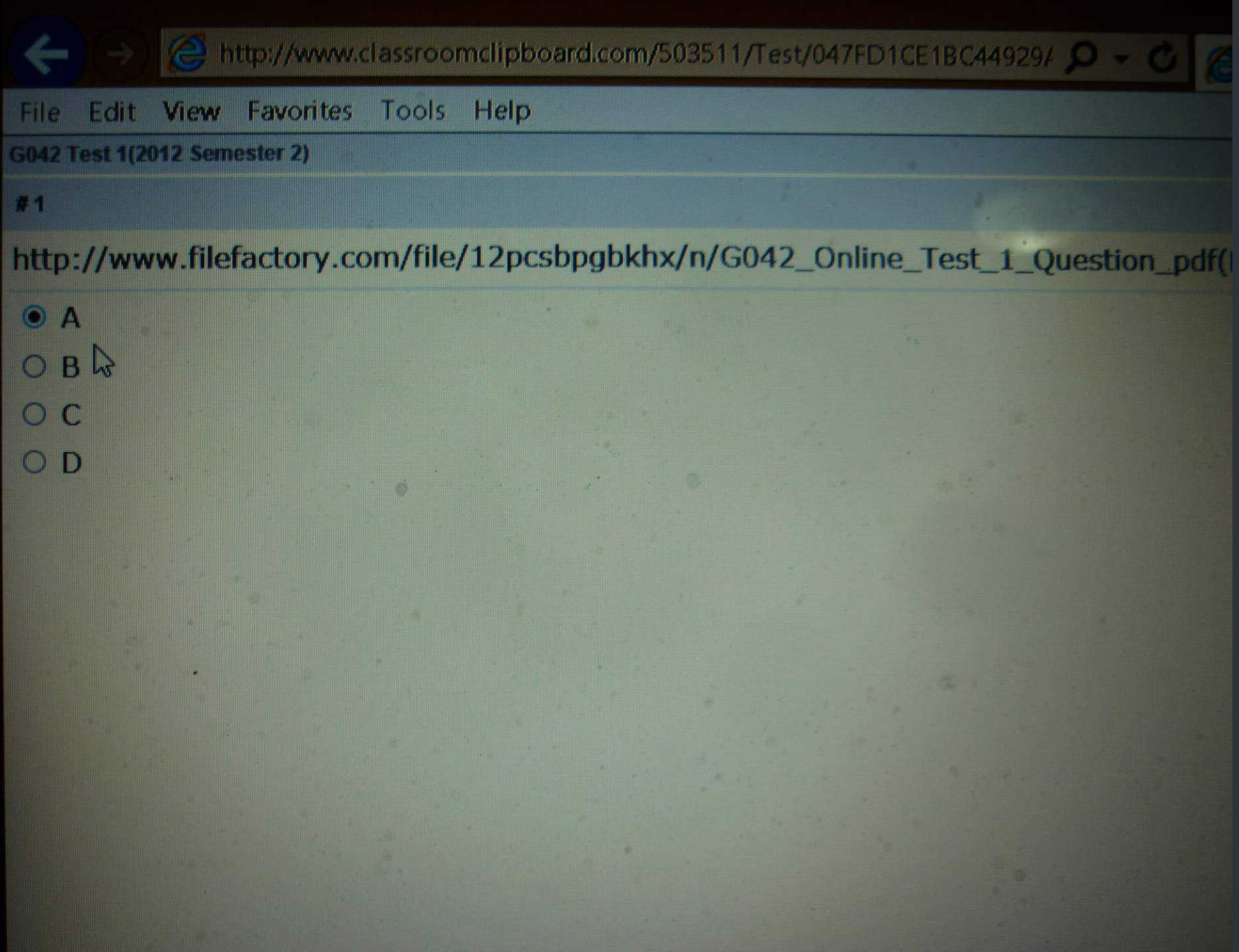
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G042 Test 1(2012 Semester 2)
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B
C
D

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- ( ) B
- ( ) C
- ( ) D

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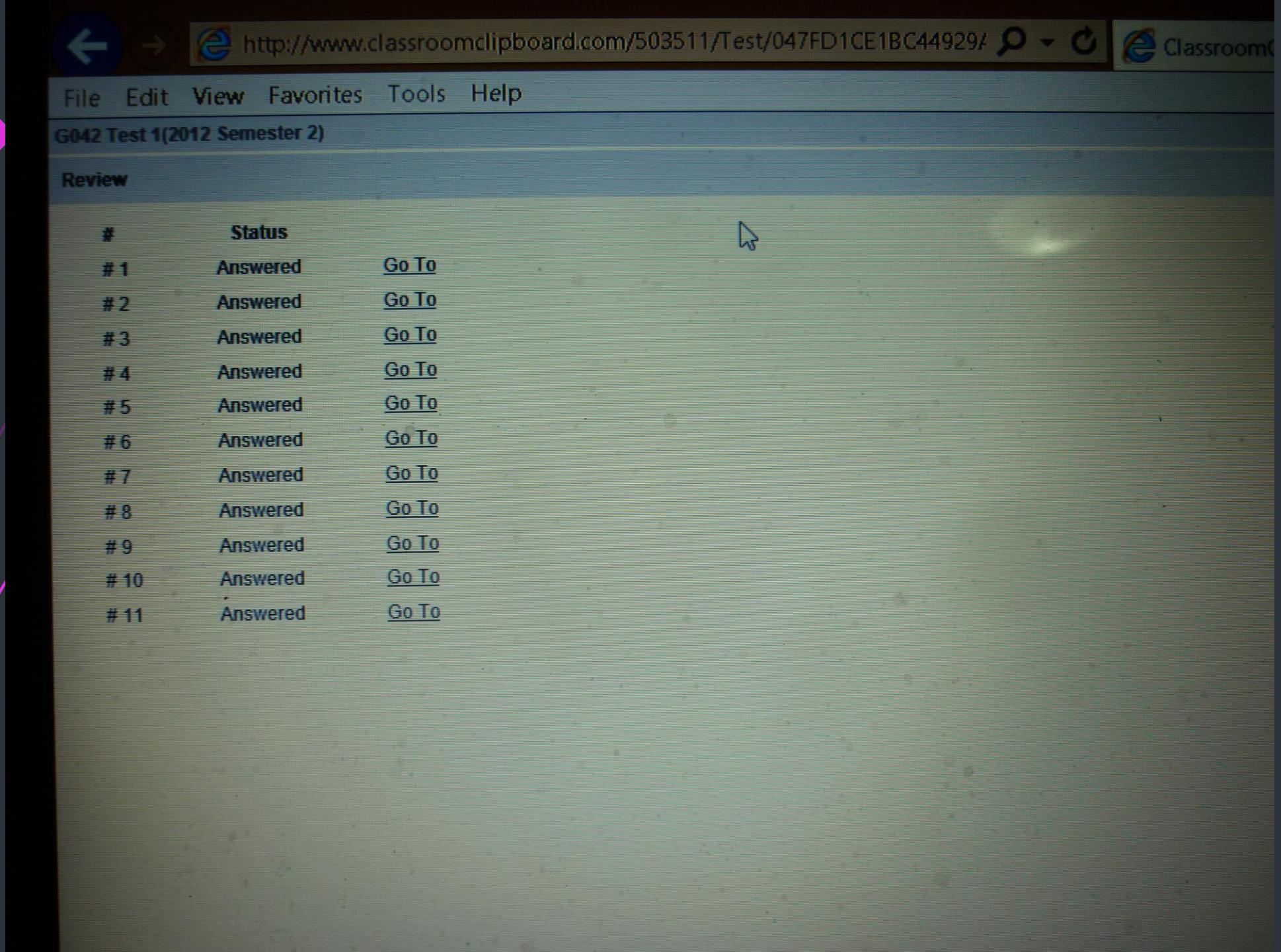
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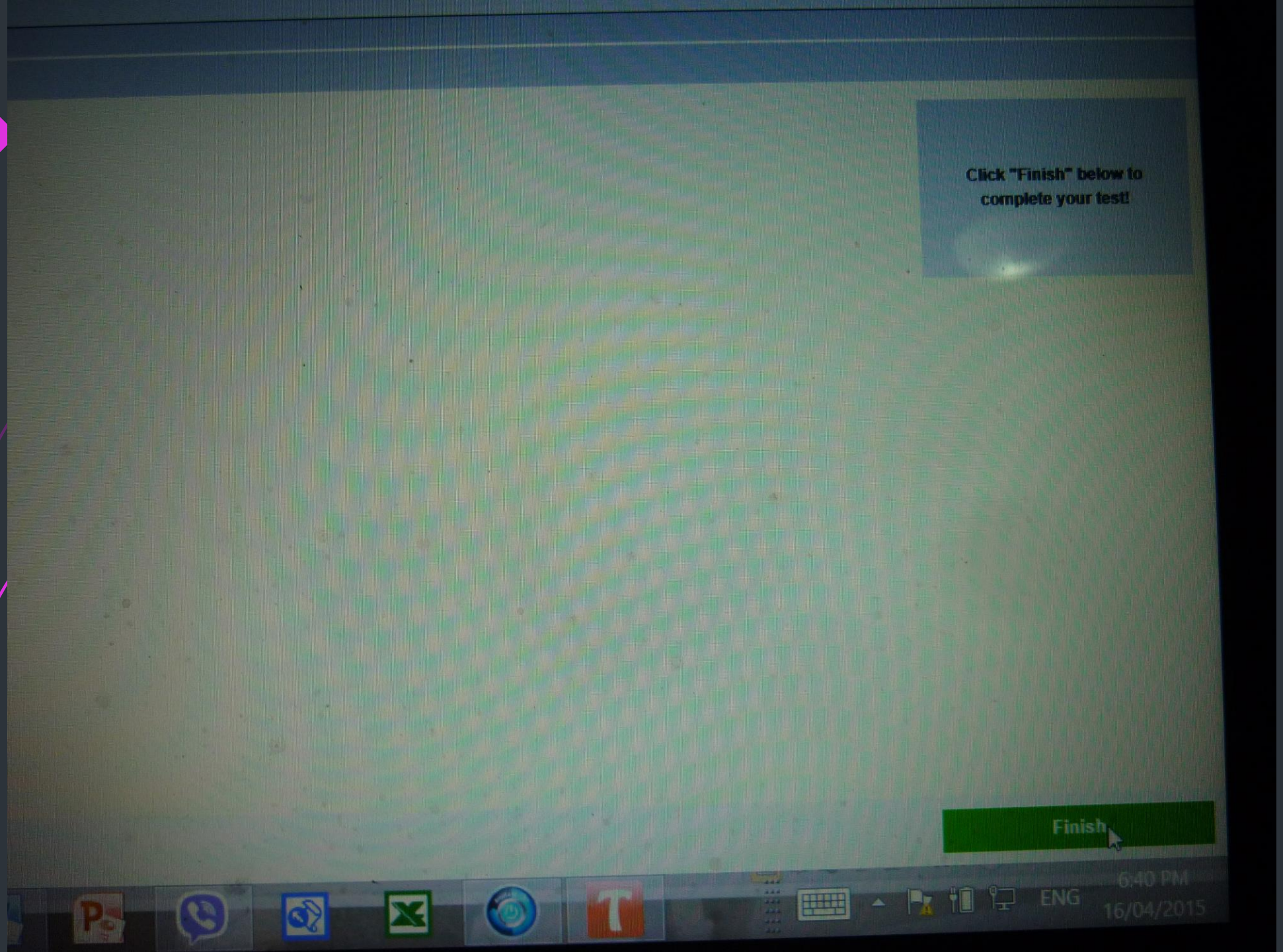
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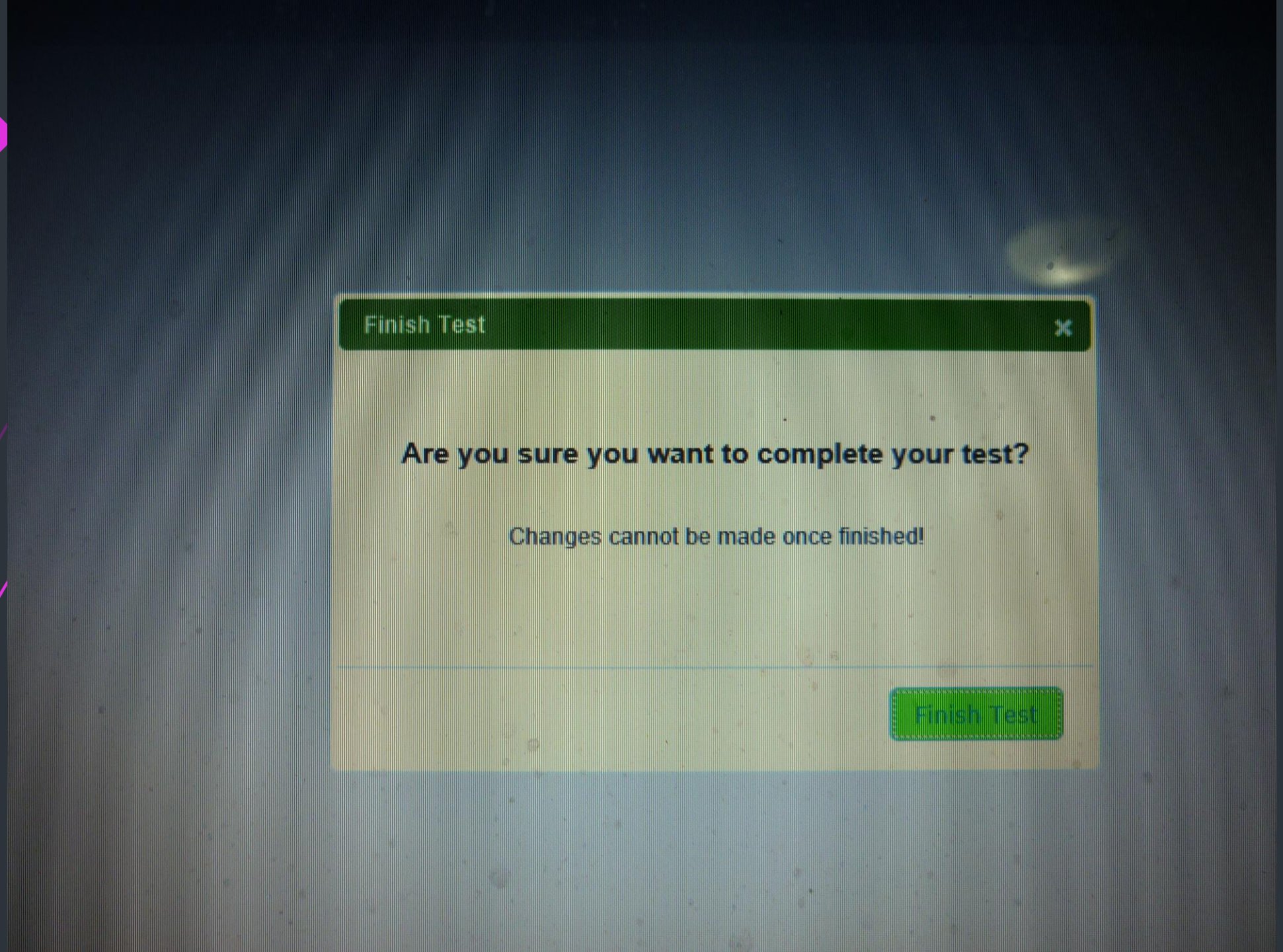
16/04/2015


Finish Test
Are you sure you want to complete your test?
Changes cannot be made once finished!
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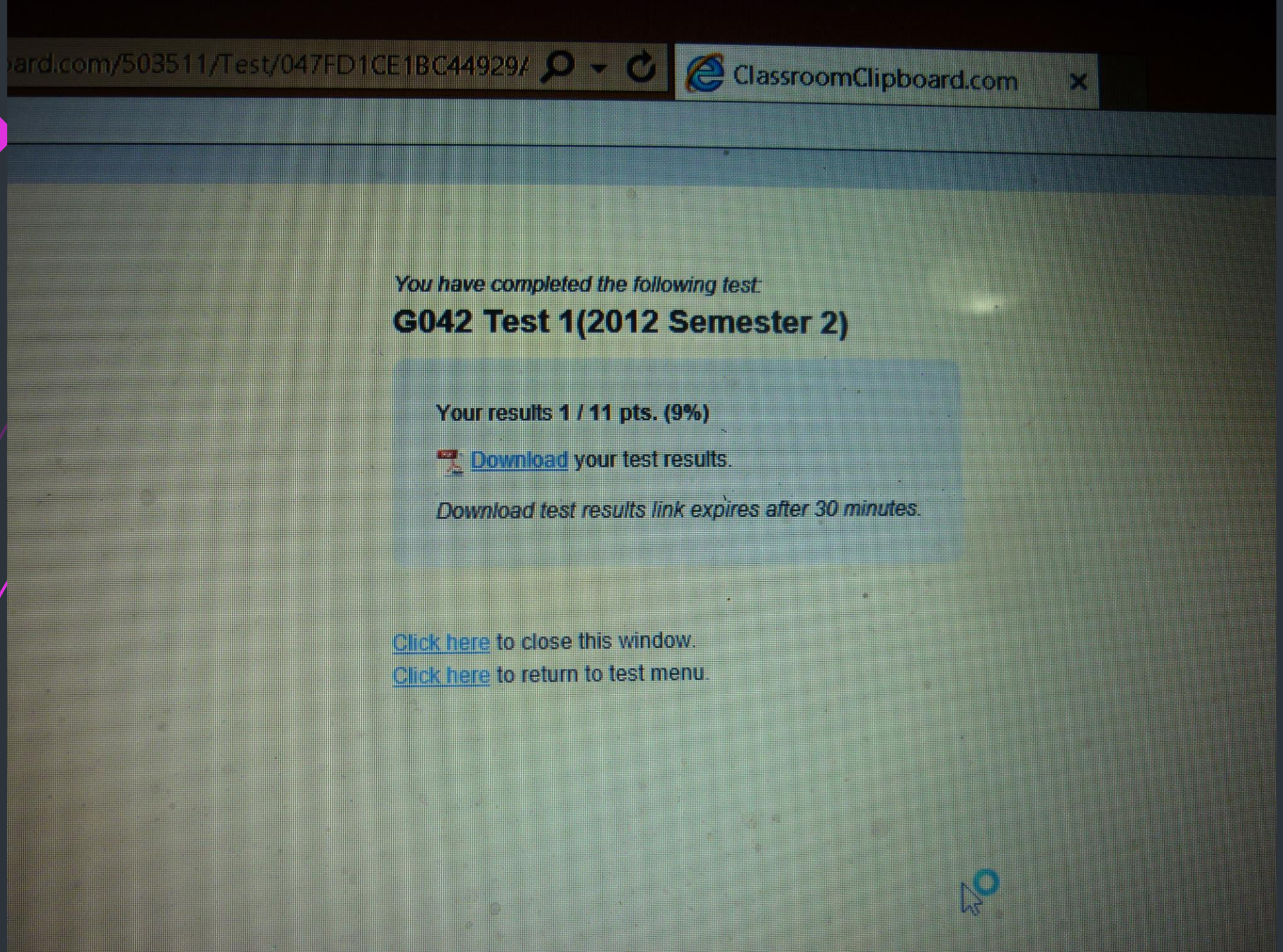
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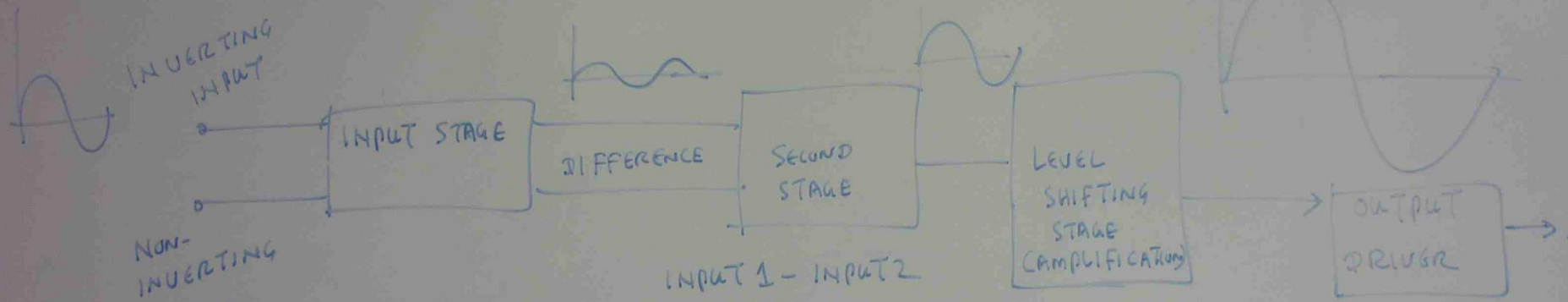
ClassroomClipboard.com
You have completed the following test:
G042 Test 1(2012 Semester 2)
Your results 1 / 11 pts. (9%)
Download your test results.
Download test results link expires after 30 minutes.
Click here to close this window.
Click here to return to test menu.

Online/ Off line simulated practical

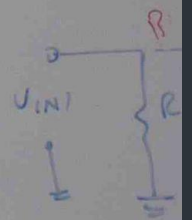
Part 1- Practical Photos

INTRODUCTION TO THE OPERATIONAL AMPLIFIER

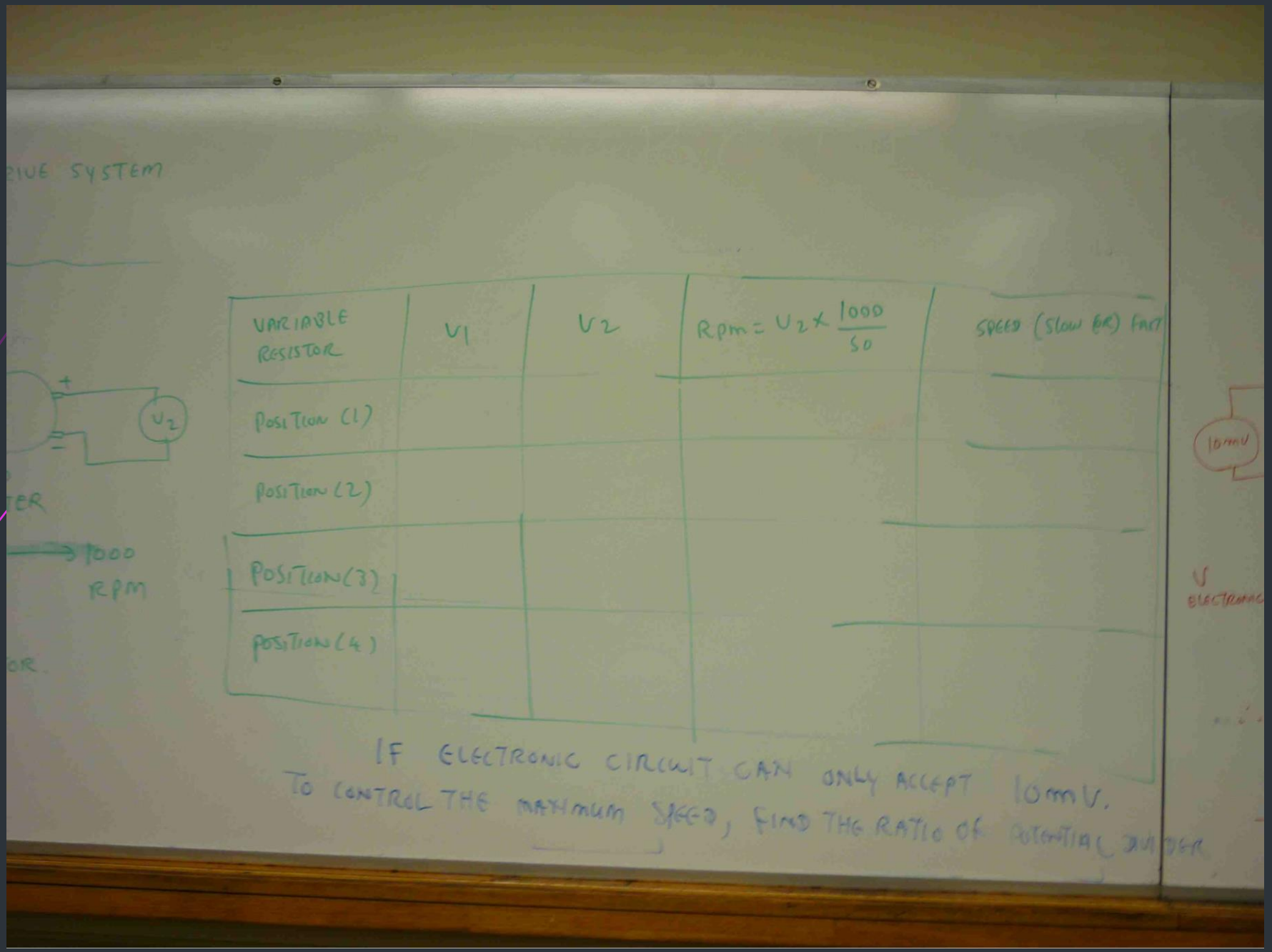


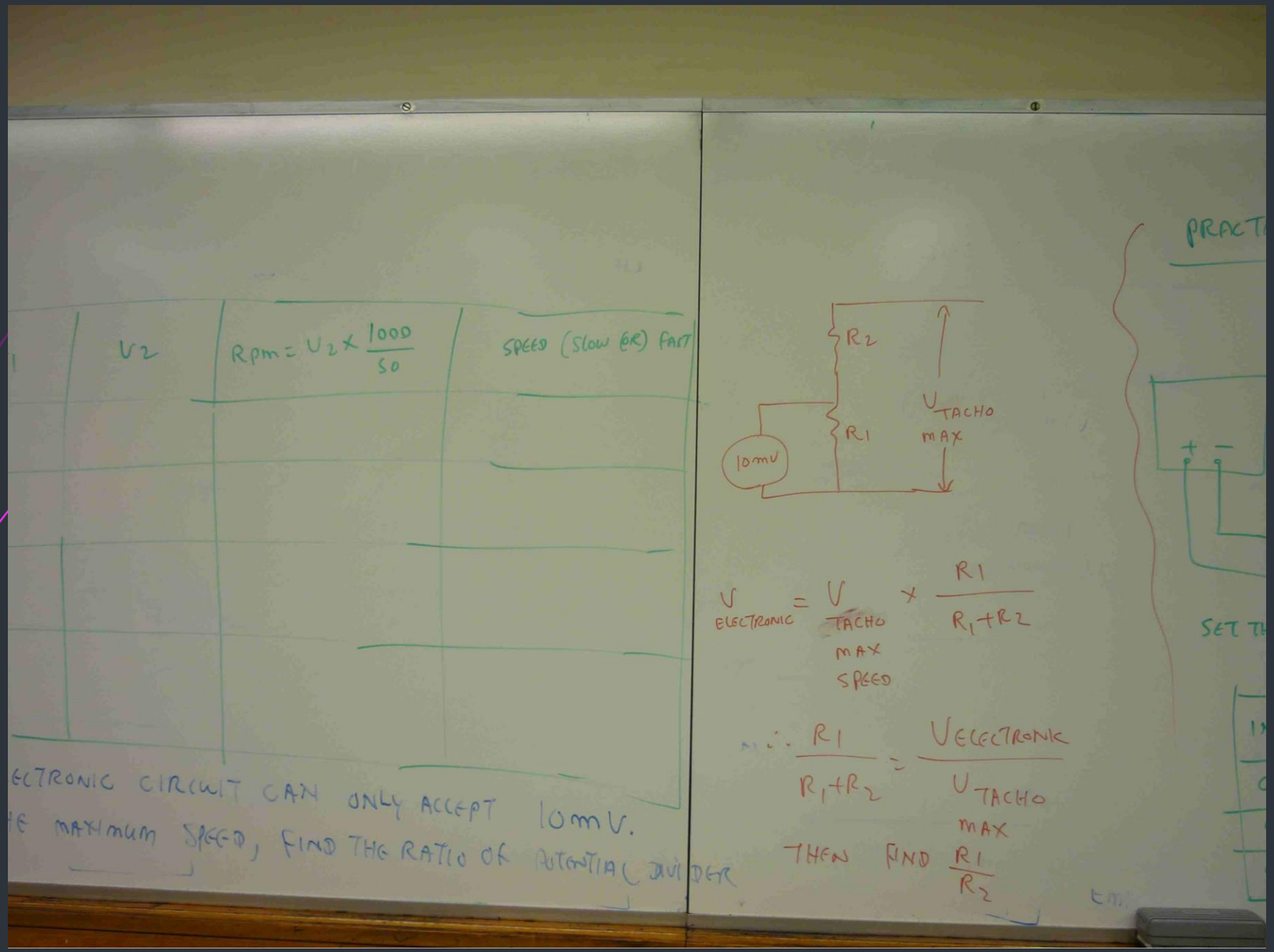
THE INPUT QUANTITY AND REFERENCE QUANTITY ARE COMPARED. THE DIFFERENCE IS FED INTO THE SECOND STAGE WHICH DOES THE AMPLIFICATION. THE VOLTAGE LEVEL IS THEN SHIFTED AND IS FED TO OUTPUT DRIVER STAGE WHICH DRIVES THE OUTPUT CONTROL CIRCUITS.

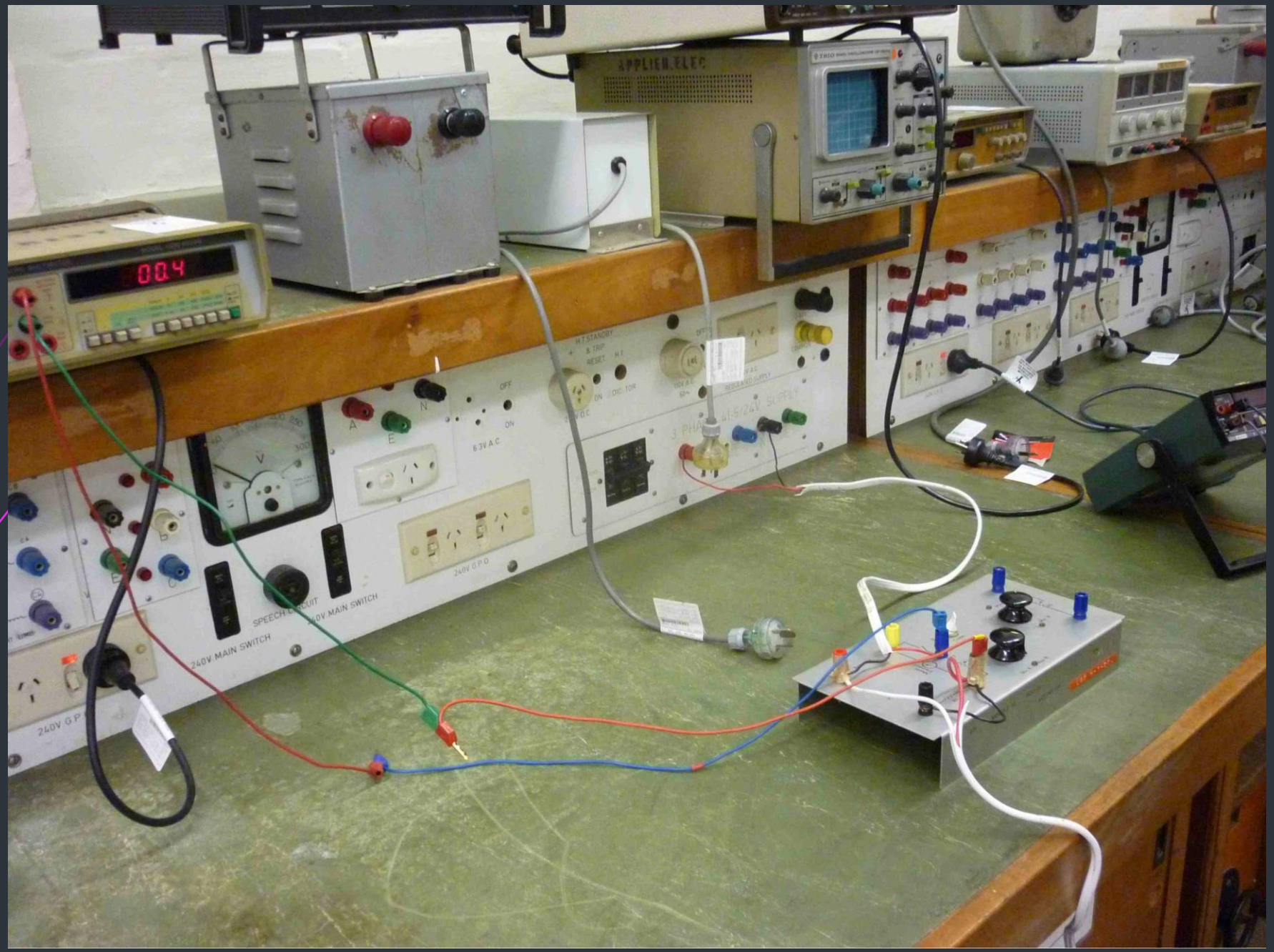
Pb DE TER
OF G

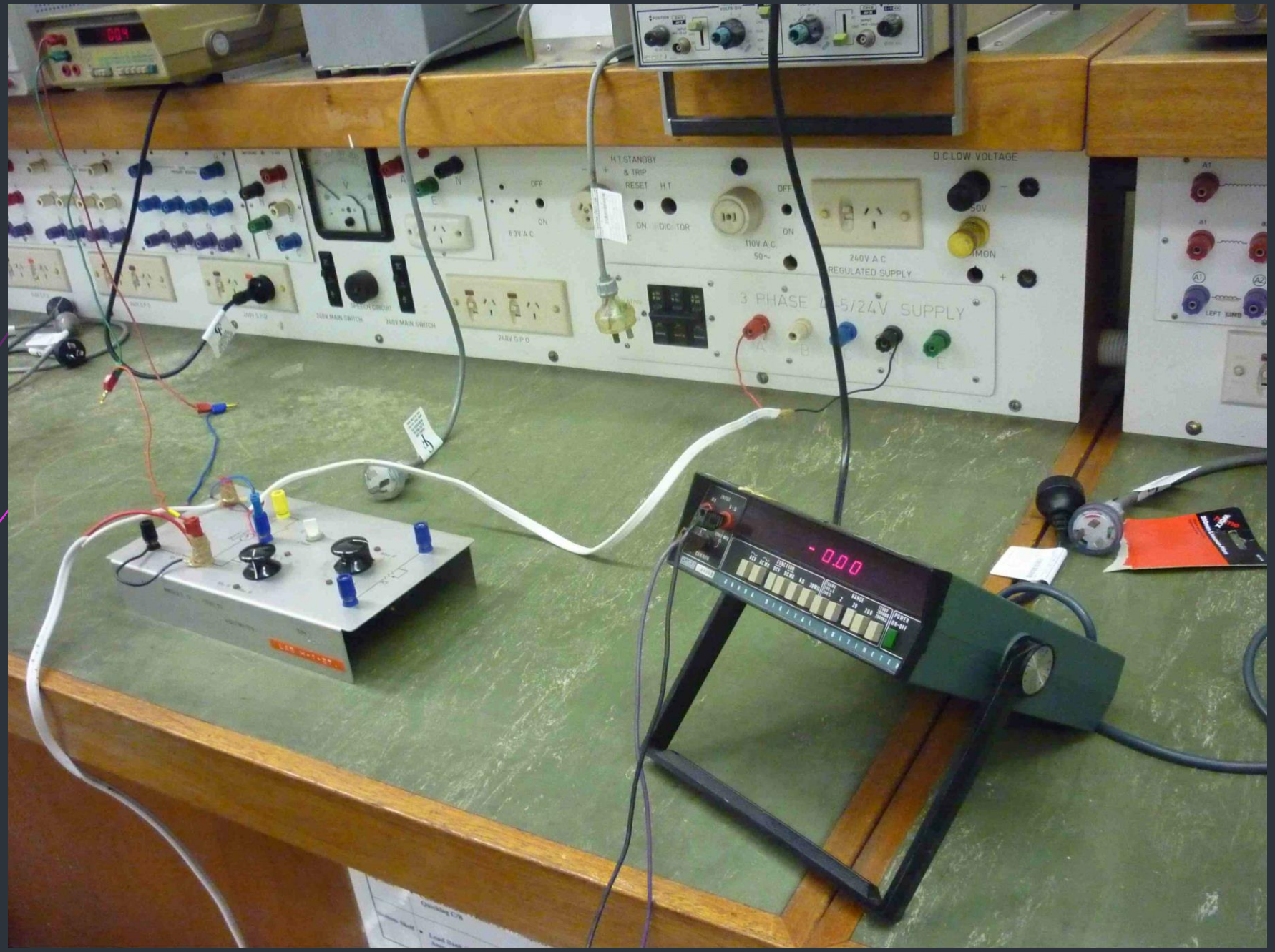


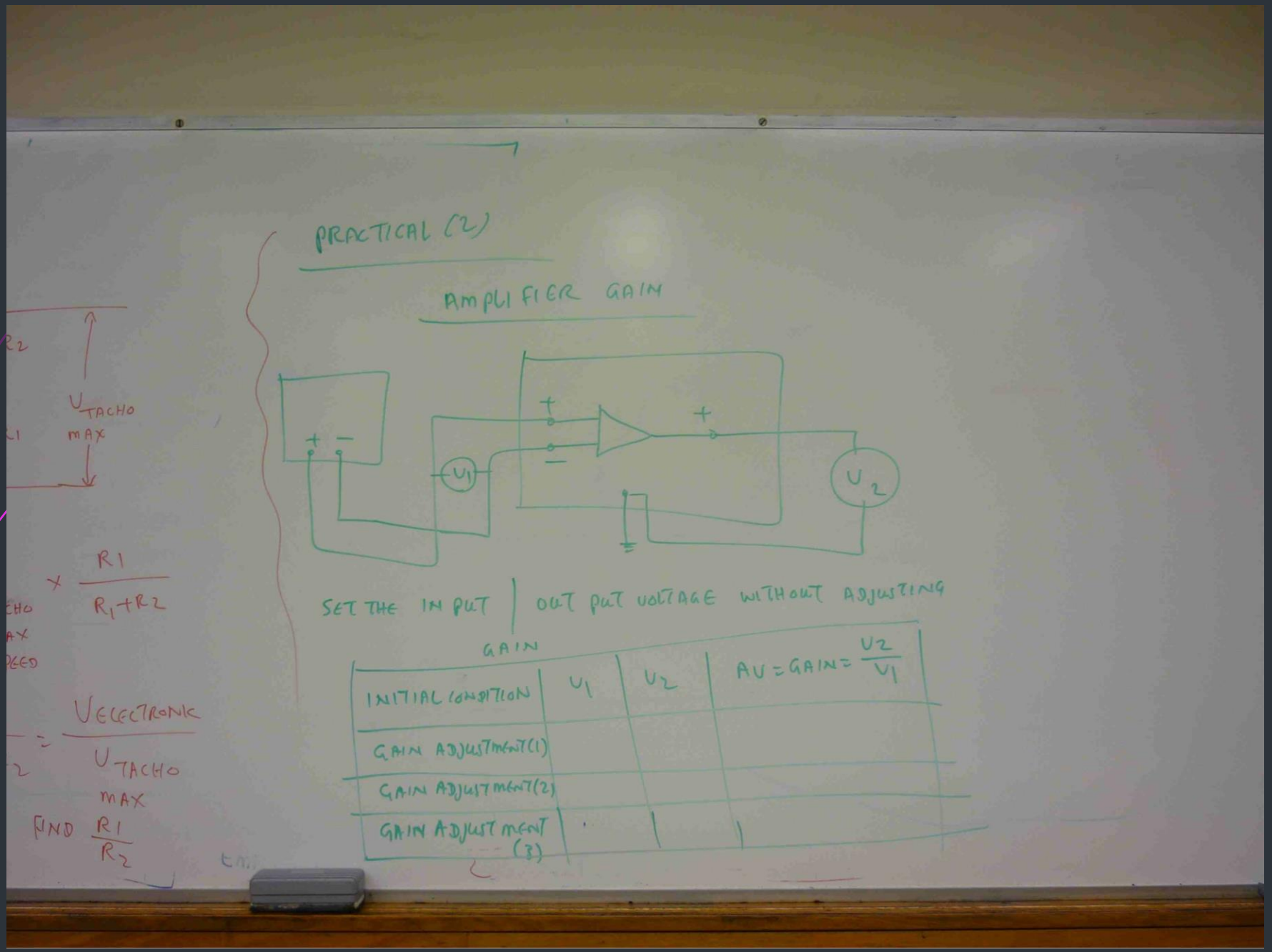
$\epsilon = U_B - U_E$
$= 0 - 0.6$
$= -0.6$

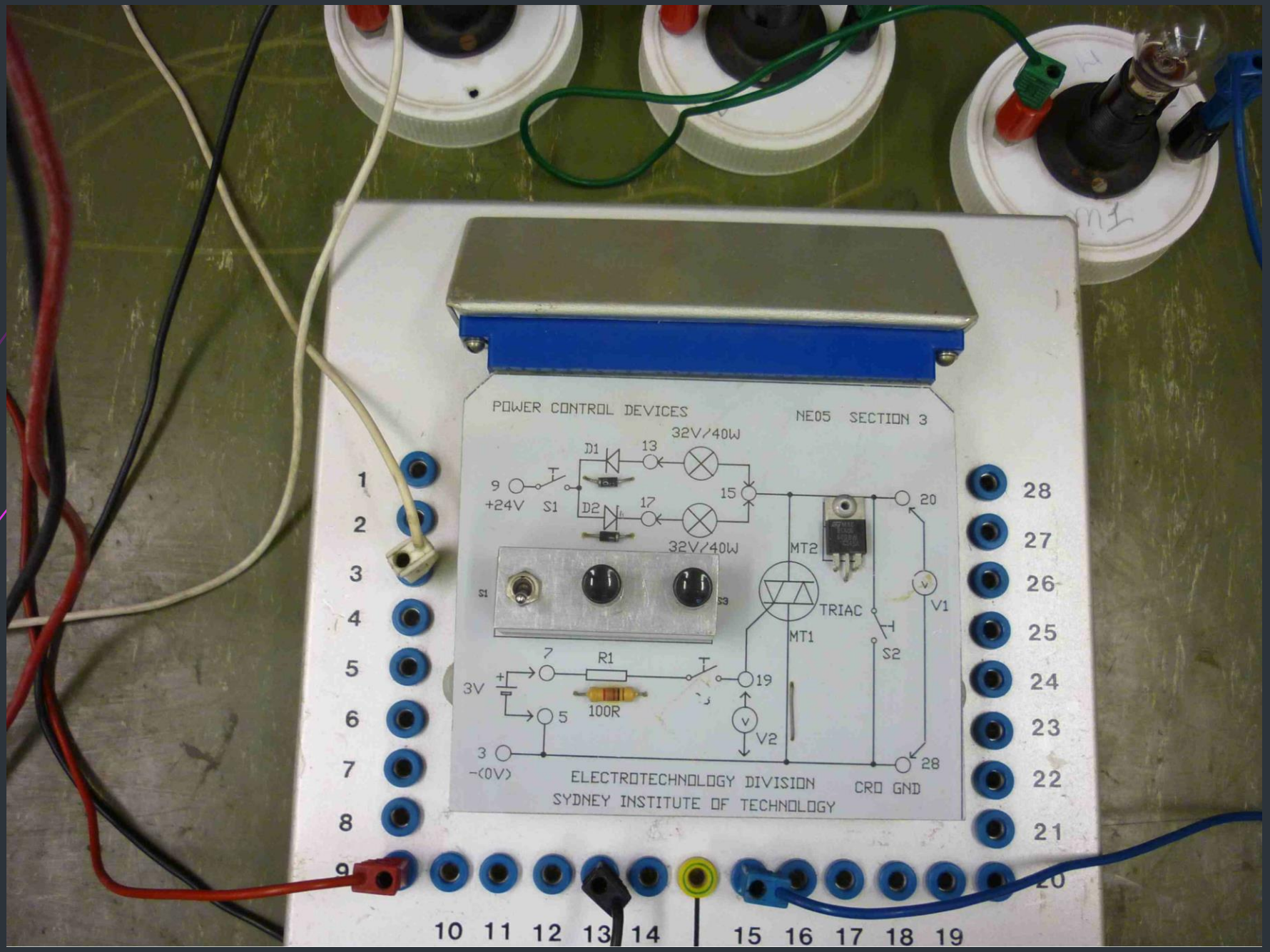

IVE SYSTEM
VARIABLE RESISTOR
V1
V2
Rpm = V2 × 1000/50
SPEED (SLOW OR) FAST
POSITION (1)
POSITION (2)
POSITION (3)
POSITION (4)
1000 RPM
10mV
IF ELECTRONIC CIRCUIT CAN ONLY ACCEPT 10mV.
TO CONTROL THE MAXIMUM SPEED, FIND THE RATIO OF

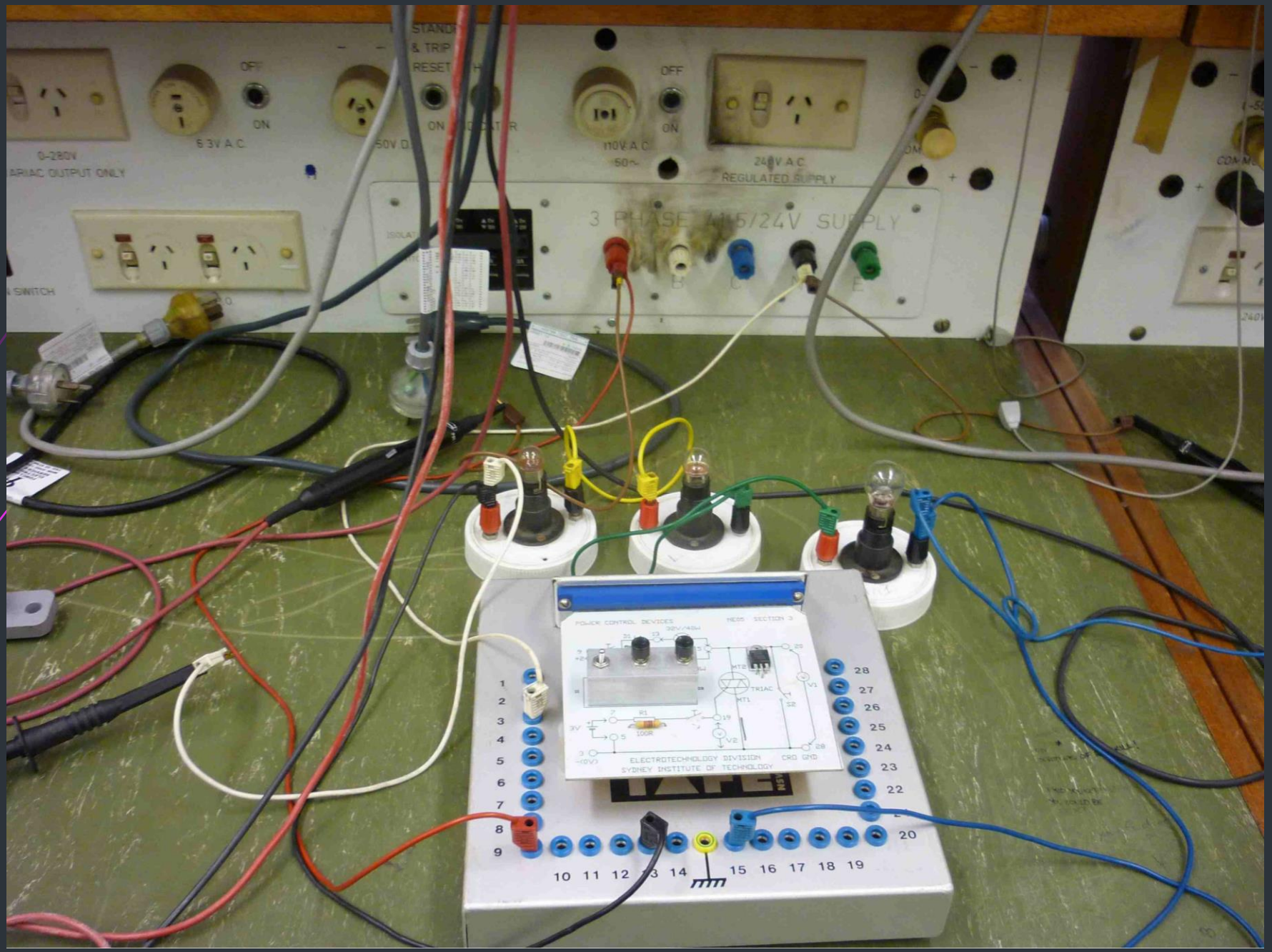

V2
Rpm = U2 × 1000/50
SPEED (SLOW OR) FAST
ECTRONIC CIRCUIT CAN ONLY ACCEPT 10mV.
E MAXIMUM SPEED, FIND THE RATIO OF POTENTIAL DIVIDER
R2
R1
10mV
U TACHO MAX
V ELECTRONIC = V TACHO MAX SPEED × R1/(R1+R2)
∴ R1/(R1+R2) = U ELECTRONIC / U TACHO MAX
THEN FIND R1/R2
PRACT
SET TH


240V MAIN SWITCH
240V MAIN SWITCH
6.3V A.C
240V G.P.O

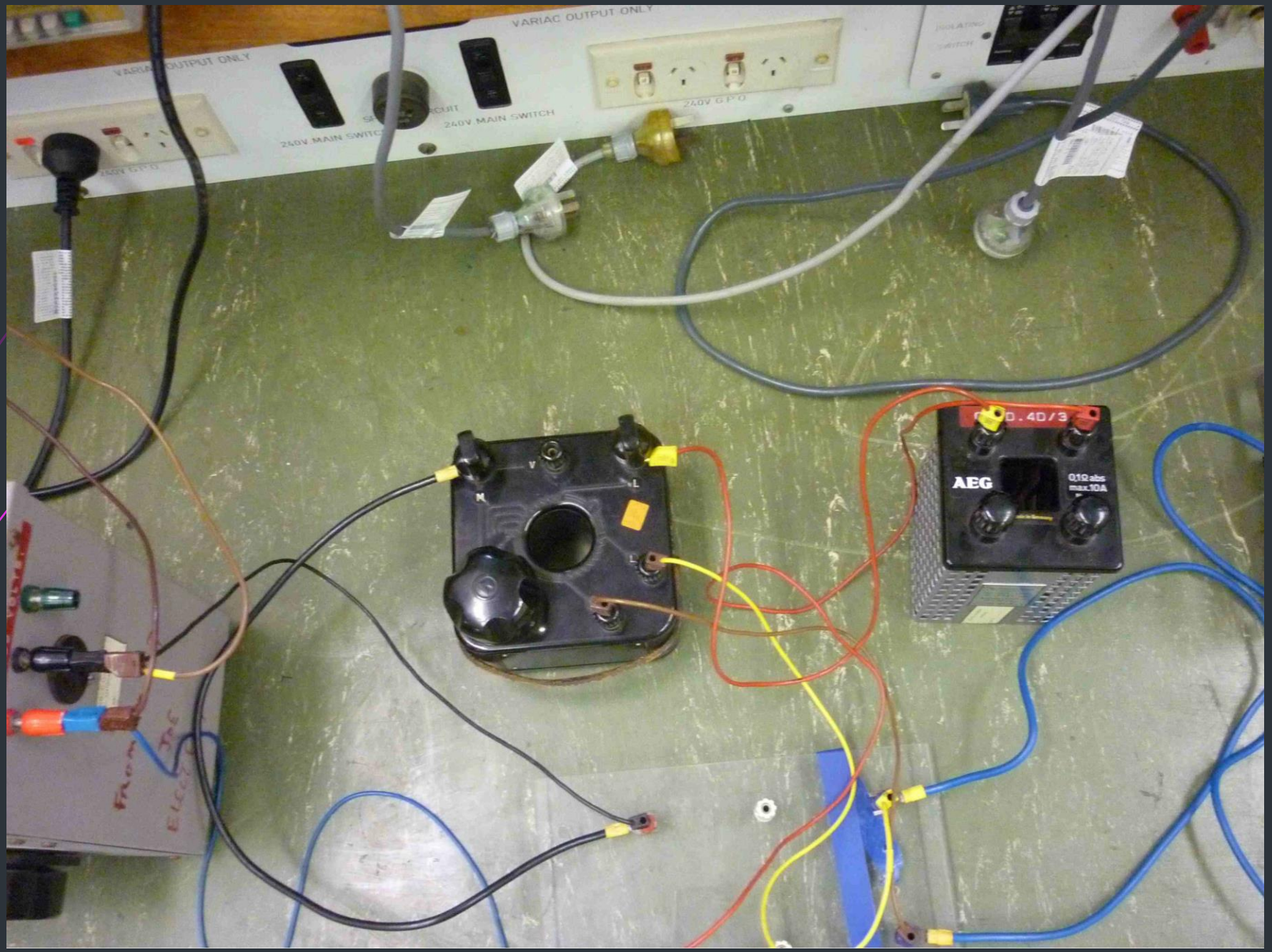

H.T STANDBY
& TRIP
RESET
H.T
D.C LOW VOLTAGE
240V A.C
REGULATED SUPPLY
SUPPLY
- 0.0 0


PRACTICAL (2)
AMPLIFIER GAIN
U1
U2
SET THE IN PUT | OUT PUT VOLTAGE WITHOUT ADJUSTING
GAIN
INITIAL CONDITION
U1
U2
AU = GAIN = U2/U1
GAIN ADJUSTMENT(1)
GAIN ADJUSTMENT(2)
GAIN ADJUSTMENT (3)
U TACHO MAX
R1/(R1+R2)
U ELECTRONIC
U TACHO MAX
FIND R1/R2

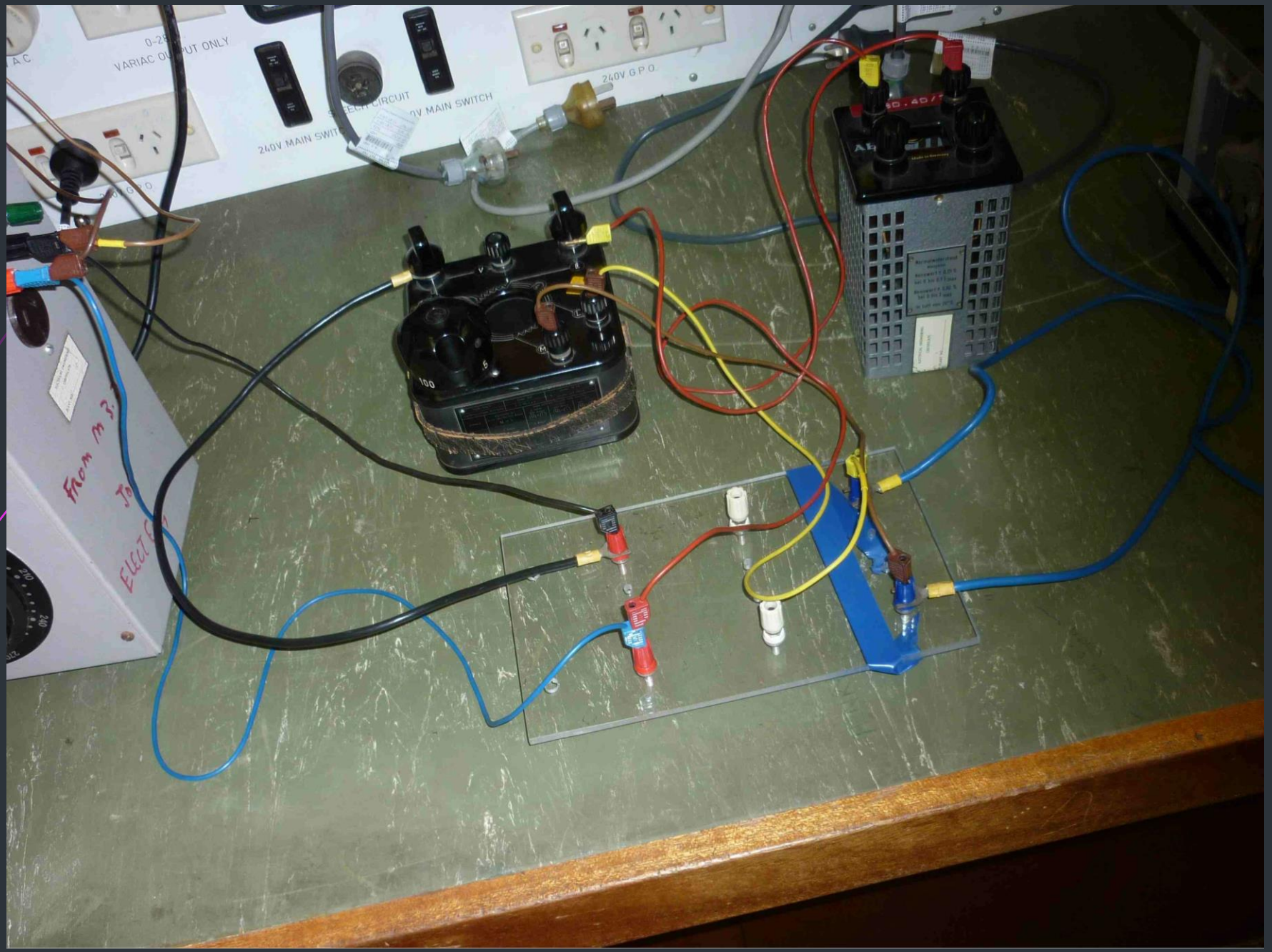

POWER CONTROL DEVICES
NE05 SECTION 3
32V/40W
D1
13
9
+24V
S1
D2
17
15
32V/40W
MT2
20
TRIAC
MT1
V1
S2
7
R1
3V
19
100R
5
V2
3
-(0V)
28
ELECTROTECHNOLOGY DIVISION
SYDNEY INSTITUTE OF TECHNOLOGY
CRO GND
1 2 3 4 5 6 7 8 9
28 27 26 25 24 23 22 21 20
10 11 12 13 14 15 16 17 18 19

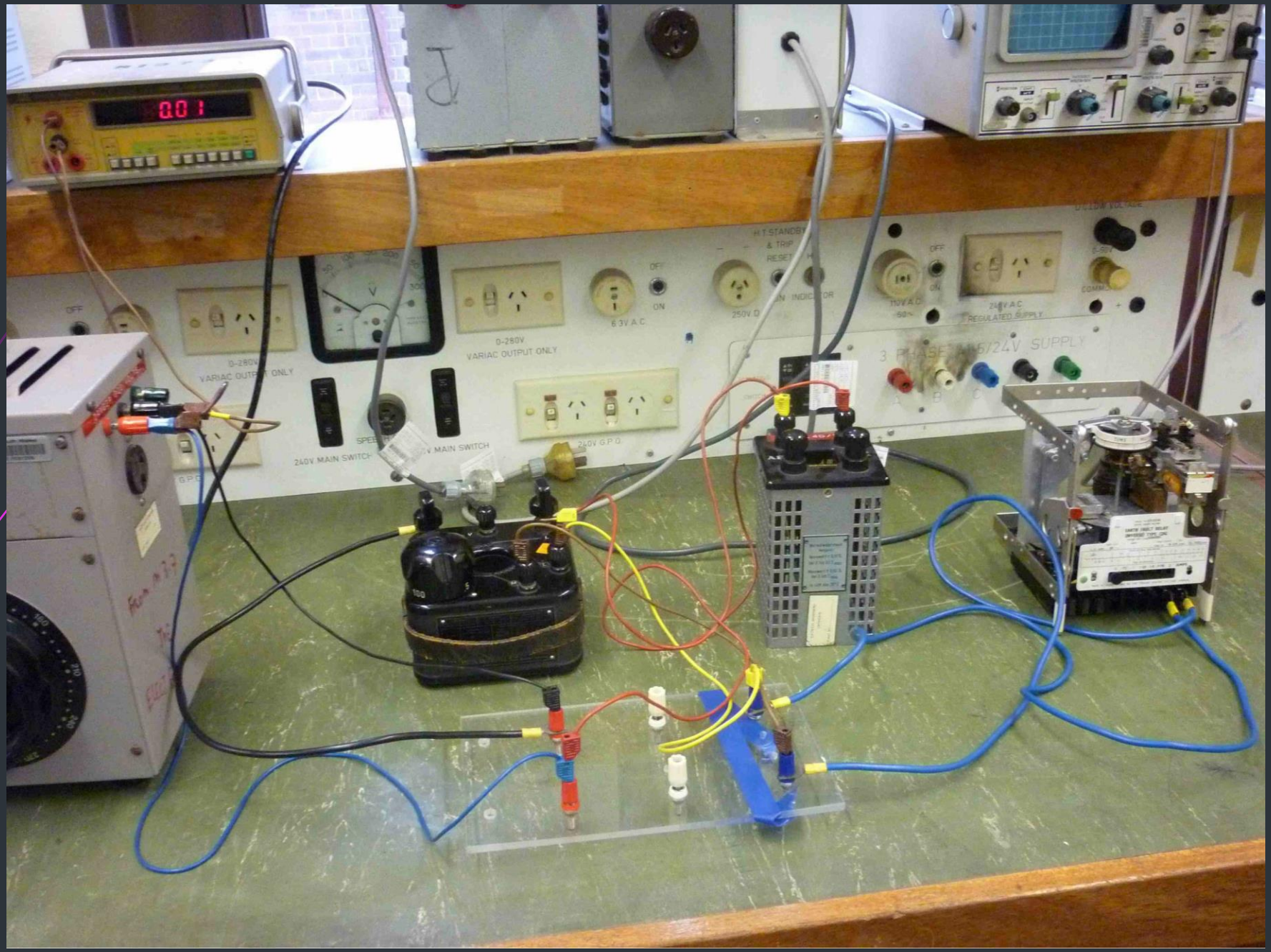

OFF
ON
6.3V A.C.
110V A.C.
50~
240V A.C.
REGULATED SUPPLY
0-280V
TRIAC OUTPUT ONLY
POWER CONTROL DEVICES
ELECTROTECHNOLOGY DIVISION
SYDNEY INSTITUTE OF TECHNOLOGY
TRIAC
100R
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18 19
20 22 23 24 25 26 27 28

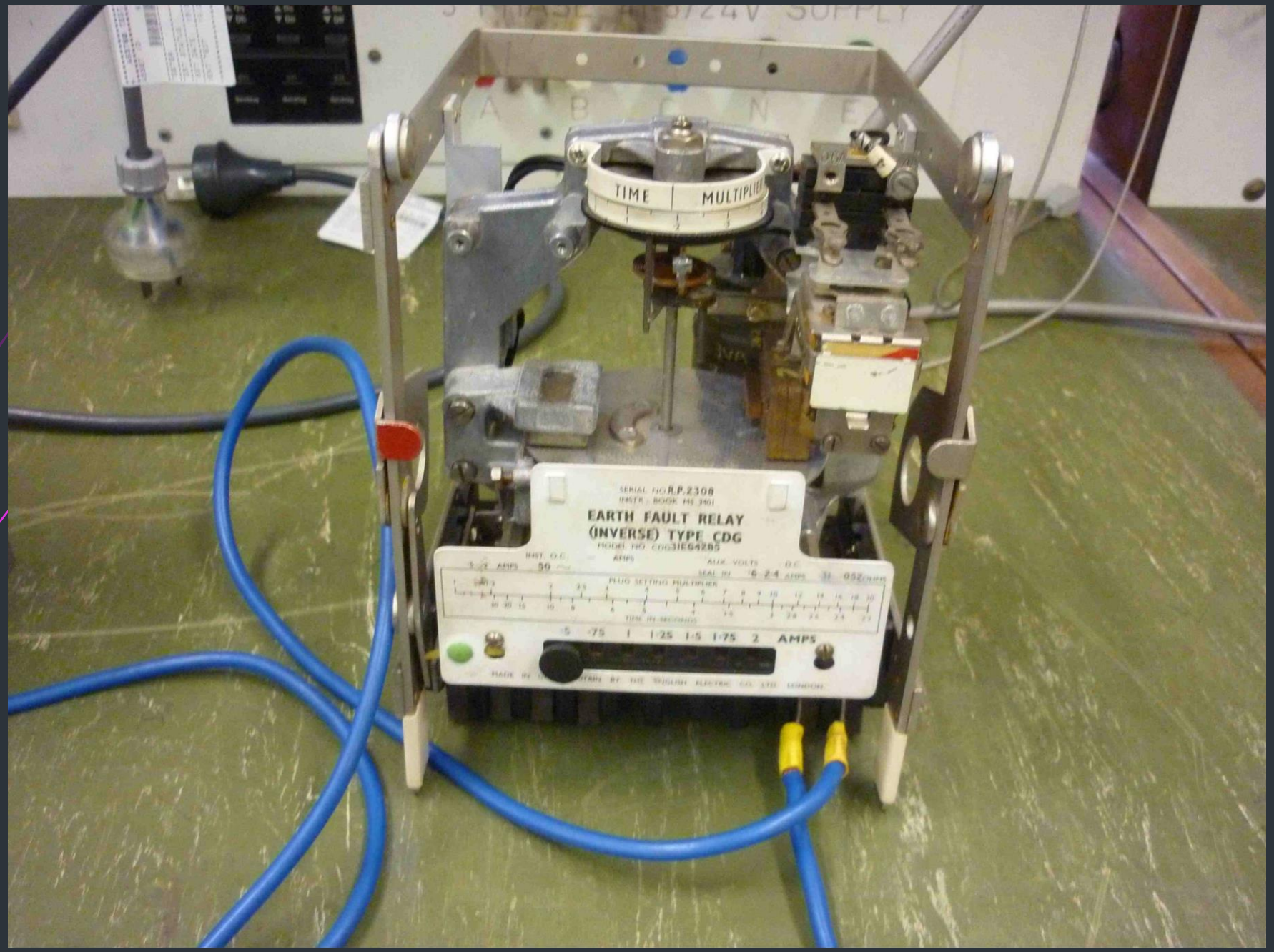

BWD 880 POWERSCOPE
CH1
CH2
CH3
CH4
POSITION VOLTS / DIV
DC
AC
GND
BAL
CMR
CH SEL
±1000V MAX. EACH INPUT
READY
RESET
SS
PH
LEVEL
EXT
LINE
VERNIER SEC/DIV
CAL
COUNT
UP
STOP
DOWN
DEGREES
PHASE ANGLE
EXTERNAL TRIG / PH
±600V MAX
BEAM FIND
REFERENCE
MARKER OFF
180°
120°
240°
ON
PULL FOR OFFSET
CALIBRATE
10V
100V
ASTIG
POWER
PWR OFF
GRATICULE
FOCUS
INTENSITY
TRIO 15MHz OSCILLOSCOPE CS-1560A
POWER ILLUM
OFF
VARIABLE SWEEP TIME/DIV


VARIAC OUTPUT ONLY
240V MAIN SWITCH
240V G.P.O
AEG
0,1Ω abs
max.10A

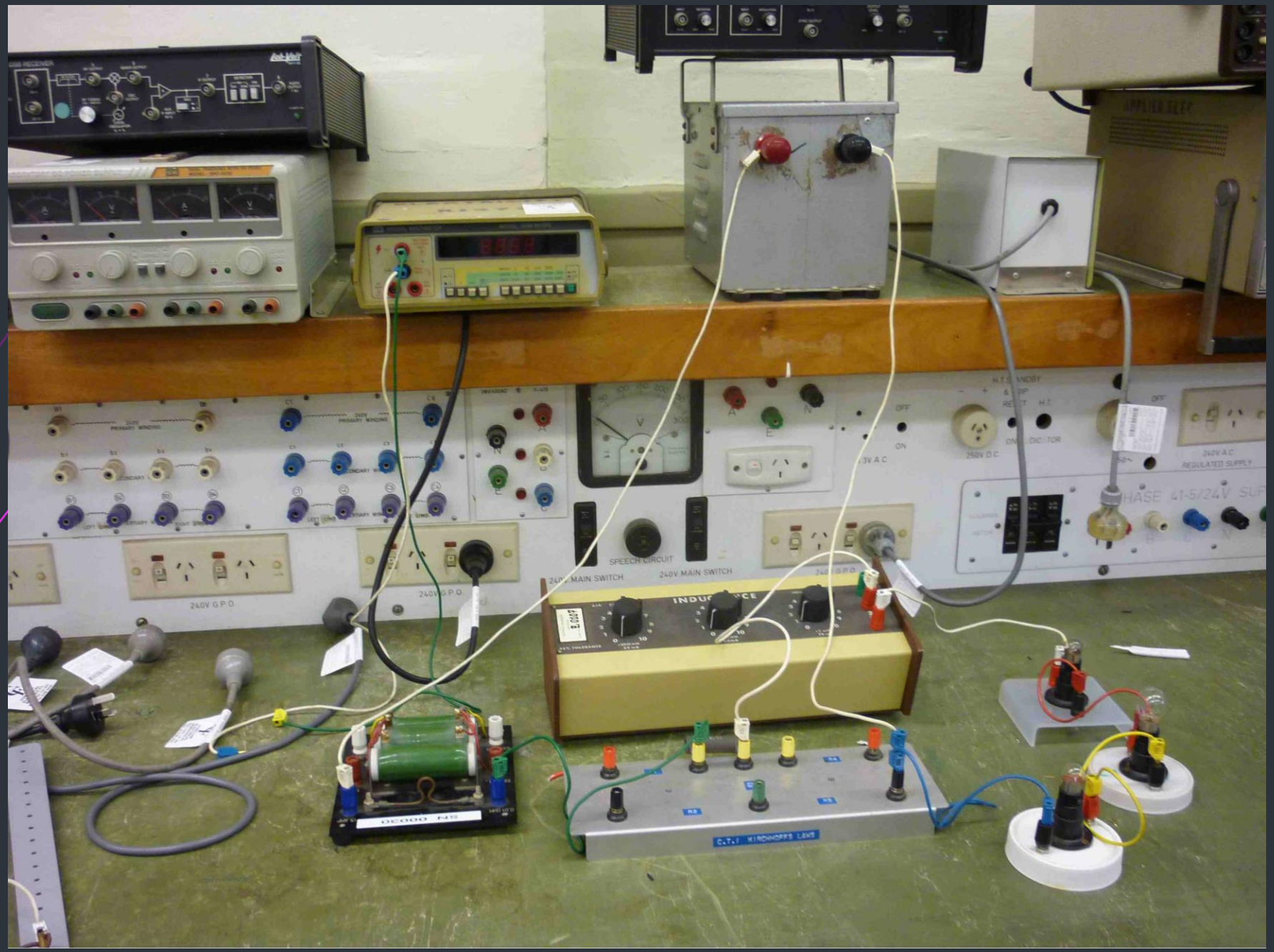

V
M
L
L
M


240V G.P.O.
240V MAIN SWITCH


0.01
VARIAC OUTPUT ONLY
240V MAIN SWITCH
6.3V A.C
240V G.P.O
REGULATED SUPPLY


TIME
MULTIPLIER
EARTH FAULT RELAY
(INVERSE) TYPE CDG
AMPS


0.01
OFF
ON
240V A.C
REGULATED SUPPLY
110V A.C
50~
EARTH
& TRIP
HT
RESET
INDICATOR
ON
OFF
ON
6.3V A.C
0-280V
VARIAC OUTPUT ONLY
0-280V
VARIAC OUTPUT ONLY
6.3V A.C
240V MAIN SWITCH
240V G.P.O
ISOLATE BEFORE OPENING
New South Wales
TAPE 0501359


240V G.P.O.
240V MAIN SWITCH
SPEECH CIRCUIT

Engineering Practicals

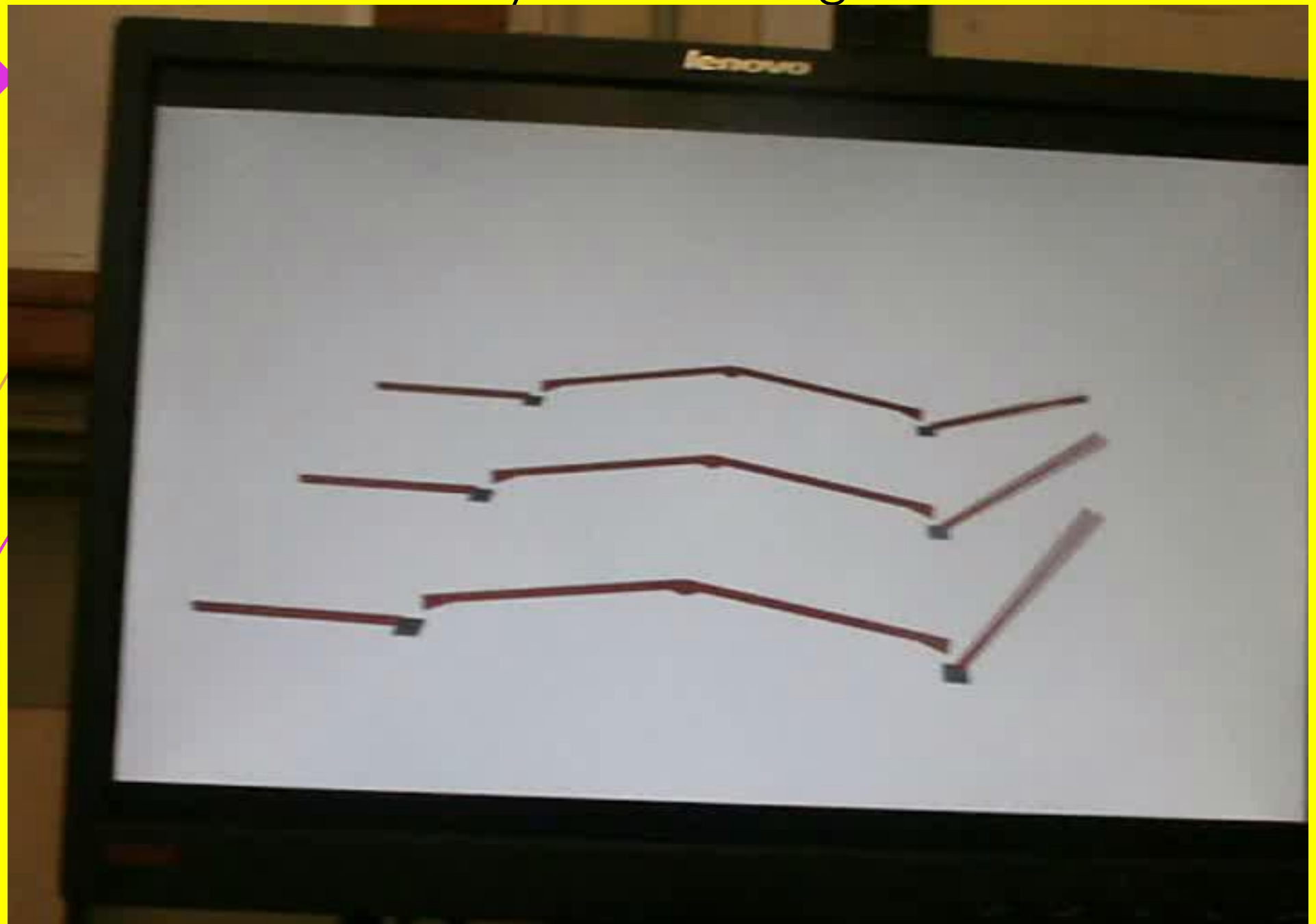
www.highlightcomputer.com/practical.htm

Link

Basic Skill Training-Civil-Bricklaying

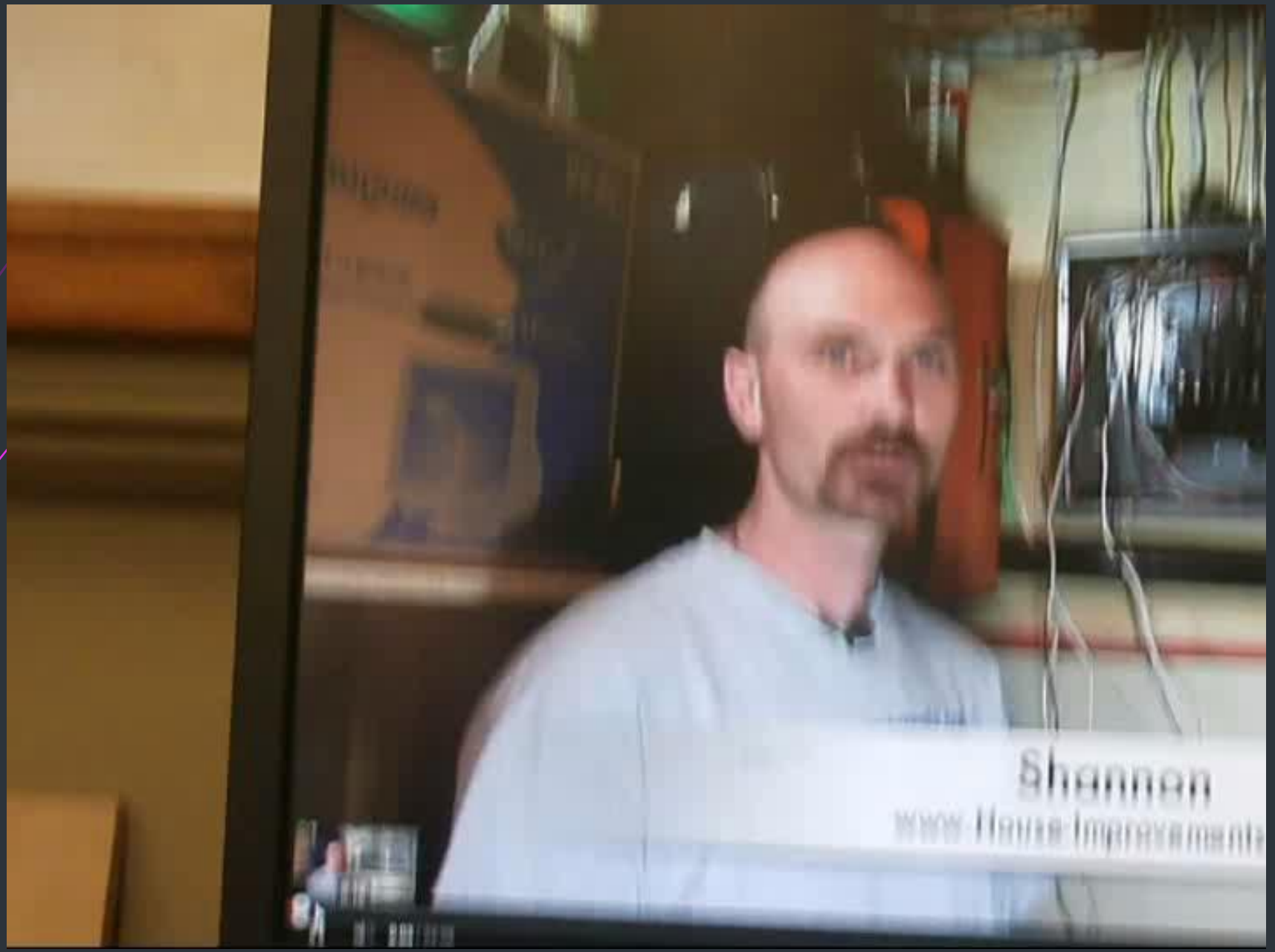
Production Operator Training-Electrical –Coil Manufacturing

Overall construction system training-Civil Construction



Detailed Concept Training-Mechanical-Engine Assembly

Advanced Skills Training Electrical-Switchboard Installation



Practical training videos are to be developed to provide the specific skills at the different levels

Learning Platform example

http://www.highlightcomputer.com/onlineteaching1.htm

Using multimedia & videos in teaching & Learning

http://www.highlightcomputer.com/videos1.htm

Using Youtube in teaching & learning

http://www.highlightcomputer.com/videos2.htm

Sample Course Construction & Learning System

Link 1

Link 2

Part 1-Quality Assurance for the whole institute

EVALUATION FRAME WORK SAMPLE

Click HERE

Resources Location

MEng C/Detailed Course Teaching Plans/Day9Session2+3 Documents

* **Plan and prepare evaluation**

1. Plan – stakeholders are identified, feedback tools are developed/chosen that suit the stakeholders, responsibilities are allocated for collection of data, a plan for data collection is developed. The plan is then implemented. Data is collected, collated then analysed.
2. Do – data is collected and changes are made as a result of the feedback.
3. Check – changes are monitored and adjusted. Data collected is analysed and compared to the plan.
4. Act – corrective actions are taken to remove deviations from plans (e.g. assessment tools are revised; procedures are changed and introduced to staff).

Completed evaluation plan

Click HERE

Documentation developed and used to support the evaluation process e.g. checklist, evaluation observation form

Click HERE

* Communication strategy

* Click HERE

* Documented risk analysis

* Click HERE

* Records and notes of all evaluation proceedings
* Sample

* Click HERE

* How and what organisational information and documentation was gathered and accessed

1. Surveys/feedback----------Provide to individual students
2. Audits---------- **Continuous Improvement Framework** is used
3. Complaints and appeals---------- The recorded are collected
4. Staff feedback----------Collected through online system
5. Suggestions----------Collected through online system
6. Risk Assessment----------Collected through individual teacher
7. Assessment validation----------Collected through individual teacher
8. Course evaluations ----------Performed by consultation with representatives from industry, other stake holders

9.Organisational Self Assessment.-----Prepared based on the facts collected yearly

* How evaluation processes and methods were selected and implemented

* Click HERE

* How training and/or assessment processes were observed

* Click HERE

* Final evaluation report

* Click HERE

Knowledge	Graduates at this level will have broad and coherent theoretical and technical knowledge with depth in one or more disciplines or areas of practice

Skills	Graduates at this level will have well-developed cognitive, technical and communication skills to select and apply methods and technologies to: ·analyse and evaluate information to complete a range of activities ·analyse, generate and transmit solutions to unpredictable and sometimes complex problems · transmit knowledge, skills and ideas to others

Application of knowledge and skills	**Graduates at this level will apply knowledge and skills** **to demonstrate autonomy, well-developed judgement and responsibility:** **· in contexts that require self-directed work and learning** **· within broad parameters to provide specialist advice and functions**

The assessment grades are given at USA Grading Criteria together with Australian Competency based training system, Test / Examination & Project Assignments are utilized in assessment tasks.

The assessment tasks are designed to assess the candidate's capability to take responsibility for engineering / business / IT projects and programs in the most far-reaching sense.

This includes the reliable functioning of all materials, components, sub-systems and technologies used; their integration to form a complete, sustainable and self-consistent system; and all interactions between the technical system and the context within which it functions.

The assessment tasks are designed for candidate's capability in interpreting technological possibilities to society, business and government; and for ensuring as far as possible that policy decisions are properly informed by such possibilities and consequences, and that costs, risks and limitations are properly understood as the desirable outcomes.

The assessment activities are also focussed on bringing knowledge to bear from multiple sources to develop solutions to complex problems and issues, for ensuring that technical and non-technical considerations are properly integrated, and for managing risk as well as sustainability issues.

The students’ advancement of technologies and with the development of new technologies and their applications , new business practice through innovation, creativity and change.

Professional Engineers may conduct research concerned with advancing the technology & business practice and with developing new principles and technologies within a broad technology & business practice discipline.

Part 2-Quality Assurance for each department & section

Assessment Validation Plan

Click HERE

Assessment Cover Sheet

Click HERE

Assessment Feedback Sheet

Click HERE

Assessment Mapping TEMPLATE

Click HERE

RPL Validation Form

Click HERE

ASSESSMENT MAPPING FOR EACH UNIT

Click HERE

Components of Assessment Mapping

Click **HERE**

Industrial Consultation Record Sample

Click HERE

Engg Associate Stage 1 Compentency Overall Matrix EE011

Click HERE

Individual Teacher's Currency Check List

Click HERE

Individual Unit Evaluation

Click HERE

Learner Resources Sample

Click HERE

Practical Resources

Click HERE

DEGREE LEVEL ASSESSMENT VALIDATION RISK MATRIX

Click **HERE**

Quality Assurance Record

Click HERE

Quality Assurance Records Locator (Online)

Click HERE

Reference Textbooks Record Sample

Click HERE

Students taking part in Project/ practical Online Document Sample

Click HERE

Delivery & assessment master plan for each unit Sample

Click HERE

Assessment Methods for individual unit

Click HERE

Core principles of effective guided assessment

Three interrelated objectives for quality in student guided assessment in technical education:

1. *Assessment that is guided, encourages effective approaches to learning*
2. *Assessment that validly and reliably measures expected learning outcomes, in particular the learning that characterises technical education; and*
3. *Assessment and grading that define and protect technical standards*

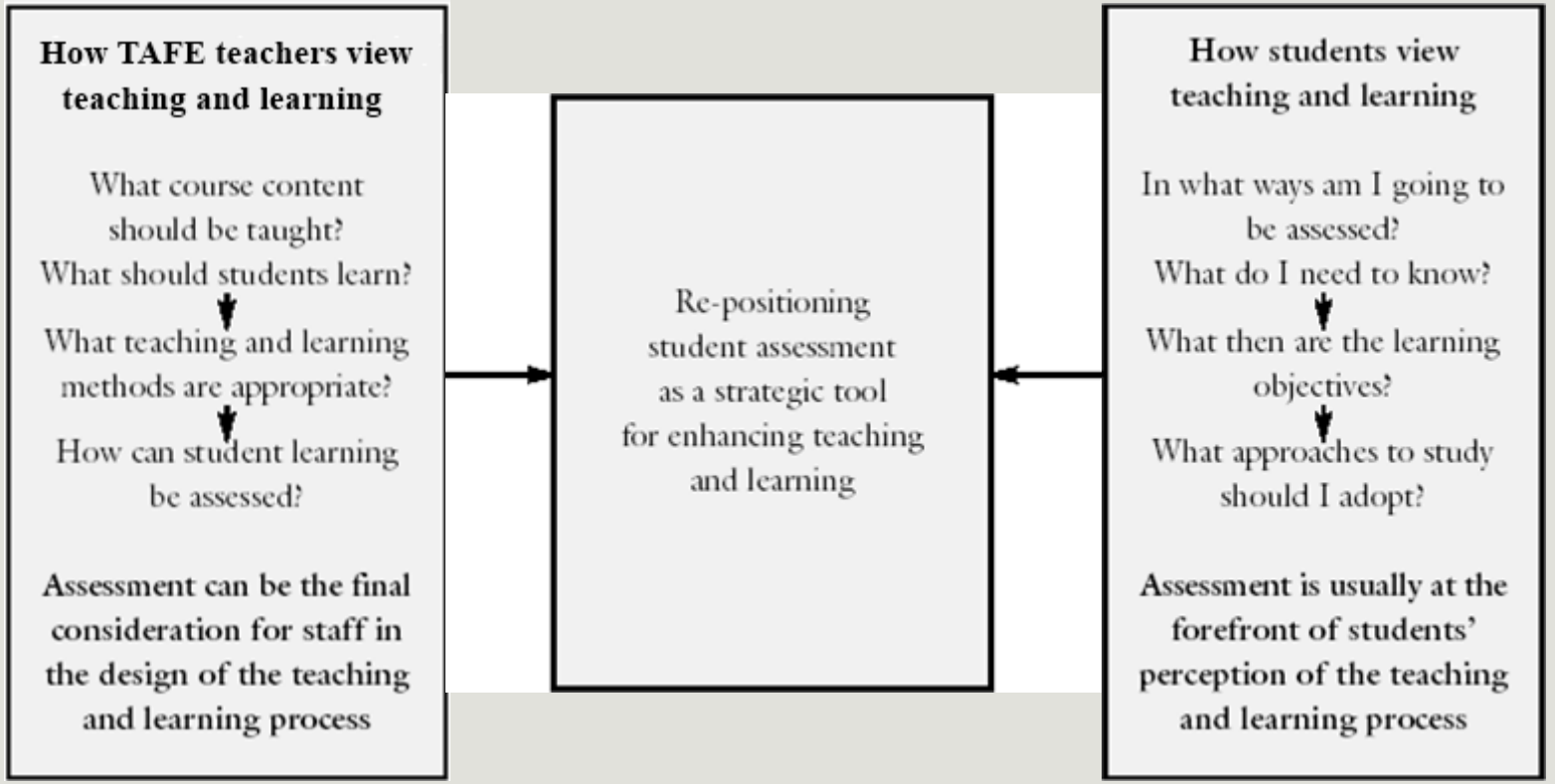
Well designed guided assessment should …

4. *set clear expectations;*
5. *establish a reasonable workload (one that does not push students into rote reproductive approaches to study); and*
6. *provide opportunities for students to self-monitor, rehearse, practise and receive feedback.*

For most students …

4. *The guidelines of assessment requirements and the assessments literally define the curriculum;*
5. *The assessment guideline and the assessments are potent, strategic tools that spell out what learning will be rewarded and guide students into effective approaches to study; and*
6. *A poorly designed assessment guideline and/or assessment has the potential to hinder learning or to stifle curriculum innovation.*

Re-positioning the role of guided assessment



16 INDICATORS OF EFFECTIVE ASSESSMENT IN TECHNICAL EDUCATION

A checklist for quality in guided student assessment

1. *Assessment is treated by staff and students as an integral component of the entire teaching and learning process.*
2. *The multiple roles of assessment are recognised. The powerful motivating effect of guided assessment requirements on students is understood and assessment tasks are designed to foster valued study habits.*
3. *There is a departmental policy that guides assessment practices. Unit assessment is integrated into an overall plan for course assessment.*

4. There must be a clear alignment between expected learning outcomes, what is taught and learnt, and the knowledge and skills assessed.

5. Assessment tasks assess the capacity to analyse and synthesise new information and concepts rather than simply recall information which has been presented.

6. A variety of assessment methods is employed so that the limitations of particular methods are minimised.

7. Assessment tasks are designed to assess relevant generic skills as well as unit-specific knowledge and skills.

8. *There is a steady progression in the complexity and demands of assessment requirements in the later years of courses.*

9. *There is provision for student choice in assessment tasks and weighting at certain times.*

10. *Student and staff workloads are considered in the scheduling and design of assessment tasks.*

11. *Excessive assessment is avoided. Assessment tasks are designed to sample student learning.*

12. *Assessment tasks are weighted to balance the developmental ('formative') and judgemental ('summative') roles of assessment. Early low-stakes, low-weight assessment is used to provide students with feedback.*

13. *Grades are calculated and reported on the basis of clearly articulated learning outcomes and criteria for levels of achievement.*
14. *Students receive explanatory and diagnostic feedback as well as grades.*
15. *Assessment tasks are checked to ensure there are no inherent biases that may disadvantage particular student groups.*
16. *Plagiarism is minimised through careful task design, explicit education and appropriate monitoring of academic honesty.*

ASSESSMENT VALIDATIONS Template Sample

Click HERE

Part 3 –Individual Students Training Level

Training & Assessment Strategy

Click HERE

Industry consultation APPRENTICE TRAINEE

Click HERE

Industry Consultation Record Training & Assessment General

Click HERE

Industry Consultation Record Skills needs Analysis.

Click HERE

Course Delivery Plan Sample

Click **HERE**

Part 4 Overall Course Approval Plan Example

Click HERE

Industry Consultation

The **purpose** of consulting with industry is to ensure that our delivery and assessment strategies, resources and methods reflect industry needs.

Industry Consultation should be conducted at various stages for a variety of purposes:

- at course development stage
- addition to the Institute's scope of registration
- development of individual training and assessment strategies for the approved courses
- during re-registration of the course on the institute's scope
- program delivery and assessment
- ongoing validation of the effectiveness of the program.

Industry Consultation

Procedure

- Industry Consultation requires a careful analysis of our needs and should be conducted in the following planned stages
- Identify the consultation needs
- Identify the appropriate Industry to be consulted
- Identify the methods and tools to consult
- Identify the methods to record industry consultation

Industry Consultation

Identify the consultation needs

- Identify the type of consultation you may require from a specific industry or its representatives – for a specific course or some units of competency. It may be seeking feedback from your industry in terms of current work practices, equipment, standard of performance and similar issues so that you can incorporate that information into your planning.

The information gathered will assist in many ways such as

- course packaging i.e. selection of appropriate electives for each cohort
- establishing a logical sequence for delivery of units
- identify appropriate attendance patterns
- develop appropriate learning resources
- update assessment tools, methods and criteria
- define the process of training planning, delivery and assessment

Industry Consultation

Identify the Industry

- Industry may include enterprises, group training organisations, industry skill councils, industry associations, authorities involved in licensing relating to your qualification(s) e.g. Office of Fair Trading, WorkCover and staff employed by Sydney Institute that have relevant competencies through current external employment in industry. In most cases it could be a collection of organisations that will employ your students.

Industry Consultation

Identify the methods and tools to consult

Industry consultation may be conducted in many ways but must always be focused on the identified needs such as:

- consultation may be conducted through attendance at a workshop, seminar, exhibition, reading a product/industry publication, internet research, written feedback, formal and informal meetings, electronically or in some cases over the phone. Some examples are
  - targeting a particular manufacturer to find out what new products are on the market, how they work and how they add value to a practitioner.
  - consultation with an existing trainee / apprentice, their employers or a part time teacher may give us some new insight into current work practices
- appropriate tools must be available for conducting the consultation. Refer to the Industry Consultation letter and questionnaire included in this document.

Industry Consultation

Identify the methods to record industry consultation

These documents provide guidance and template for you to use when consulting with industry.

Record

- Use the Industry Consultation Record (General) when consulting with Industry.
- The Industry Consultation Record (Apprentice/Trainee) is used as a guide when consulting with industry representatives in relation to apprentices and trainees.

Guidelines and information

- The Industry consultation - General (guidelines, letter and questionnaire) is used to welcome an industry representative to participate in a review of Sydney Institute's effectiveness in delivering training to employees within their organisation.
- The Industry consultation - Apprentice/Trainee (guidelines, letter and questionnaire is used to welcome an industry representative to participate in a review of Sydney Institute's effectiveness in delivering training to apprentices and trainees within their organisation.

Summarise

- The Summary of Industry Consultation Form is used to summarise the consultation processes with industry.

It is essential that all consultation details are stored either electronically or hard copy. This information must be

9.2.2 Programme Objectives

i. State the vision and mission of the Technological Institutions.

ii. Describe the Programme Objectives and state where they are published.

iii. Describe how the Programme Objectives are consistent with the vision and mission of the Technological Institutions and stakeholder requirements.

iv. Describe the processes used to establish and review the Programme Objectives, and the extent to which the programme's various stakeholders are involved in these processes.

v. Describe how the Technological Institutions ensures achievement of the Programme Objectives.

vi. Describe the ongoing evaluation of the level of achievement of these objectives, and the extent to which the programme's various stakeholders are involved in these processes.

vii. Describe how the results obtained from evaluation are being used to improve the effectiveness of the programme.

Evaluation/Obtain the Result----

Individual Teacher/Class--------- Course—Department----------The whole Institute

How to assess the learning environment is the main thing to assessthe academic position and operation condition of the whole institution.

STUDENTS SPEND a vast amount of time, in the order of 15,000 hours, in school classrooms during primary and secondary schooling. Consequently, the quality of life in these classrooms is of great importance and students' reactions to and perceptions of their school experiences are significant.

Teachers often speak of a classroom's climate, environment, atmosphere, tone, ethos or ambience and consider it to be both important in its own right and influential in terms of student learning. It would be rare, however, for science and mathematics teachers to include classroom environment measures among their evaluation procedures. Typically, teachers concentrate almost exclusively on the assessment of academic achievement, and devote little attention to factors which might be related to their students' performance.

ASSESSMENT OF CLASSROOM ENVIRONMENT

DESPITE THE FACT that the original form of several instruments measuring student perceptions of classroom environment has proved useful for various research purposes, experience has shown that many teachers would prefer an assessment method which is more economical in terms of the time required for administration and scoring.

A METHOD FOR IMPROVING CLASSROOM ENVIRONMENT

FRASER (1981) has proposed a simple approach by which teachers can use information obtained from classroom environment questionnaires to guide attempts to improve their classrooms. The basic approach involves two aspects. First, assessments of student perceptions of both their actual and preferred classroom environment are used to identify differences between the actual classroom environment and that preferred by students. Second, strategies aimed at reducing these differences are implemented. An example of the use of these methods in a secondary science class is described by Fraser and Fisher (1986) and an example involving a mathematics class is contained in Fraser, Malone and Neale (1989).

1. Assessment.

2. Feedback.

3. Reflection and Discussion.

4. Intervention.

5. Reassessment.

Scales

- My Class Inventory—Page 49+50

- Science Laboratory Environment Inventory—Page 55+61-64

Items in the What is Happening in this Class? Questionnaire

Student Cohesiveness

1. I make friendships among students in this class.
2. I know other students in this class.
3. I am friendly to members of this class.
4. Members of the class are my friends.
5. I work well with other class members.
6. I help other class members who are having trouble with their work.
7. Students in this class like me.
8. In this class, I get help from other students.

Teacher Support

9. The teacher takes a personal interest in me.
10. The teacher goes out of his/her way to help me.
11. The teacher considers my feelings.
12. The teacher helps me when I have trouble with the work.
13. The teacher talks with me.
14. The teacher is interested in my problems.
15. The teacher moves about the class to talk with me.
16. The teacher's questions help me to understand.

Involvement

17. I discuss ideas in class.
18. I give my opinions during class discussions.
19. The teacher asks me questions.
20. My ideas and suggestions are used during classroom discussions.
21. I ask the teacher questions.
22. I explain my ideas to other students.
23. Students discuss with me how to go about solving problems.
24. I am asked to explain how I solve problems.

Investigation

25. I carry out investigations to test my ideas.
26. I am asked to think about the evidence for statements.
27. I carry out investigations to answer questions coming from discussions.
28. I explain the meaning of statements, diagrams and graphs.
29. I carry out investigations to answer questions which puzzle me.
30. I carry out investigations to answer the teacher's questions.
31. I find out answers to questions by doing investigations.

32. I solve problems by using information obtained from my own investigations.

Task Orientation

33. Getting a certain amount of work done is important to me.

34. I do as much as I set out to do.

35. I know the goals for this class.

36. I am ready to start this class on time.

37. I know what I am trying to accomplish in this class.

38. I pay attention during this class.

39. I try to understand the work in this class.

40. I know how much work I have to do.

Cooperation

41. I cooperate with other students when doing assignment work.
42. I share my books and resources with other students when doing assignments.
43. When I work in groups in this class, there is teamwork.
44. I work with other students on projects in this class.
45. I learn from other students in this class.
46. I work with other students in this class.
47. I cooperate with other students on class activities.
48. Students work with me to achieve class goals.

Equity

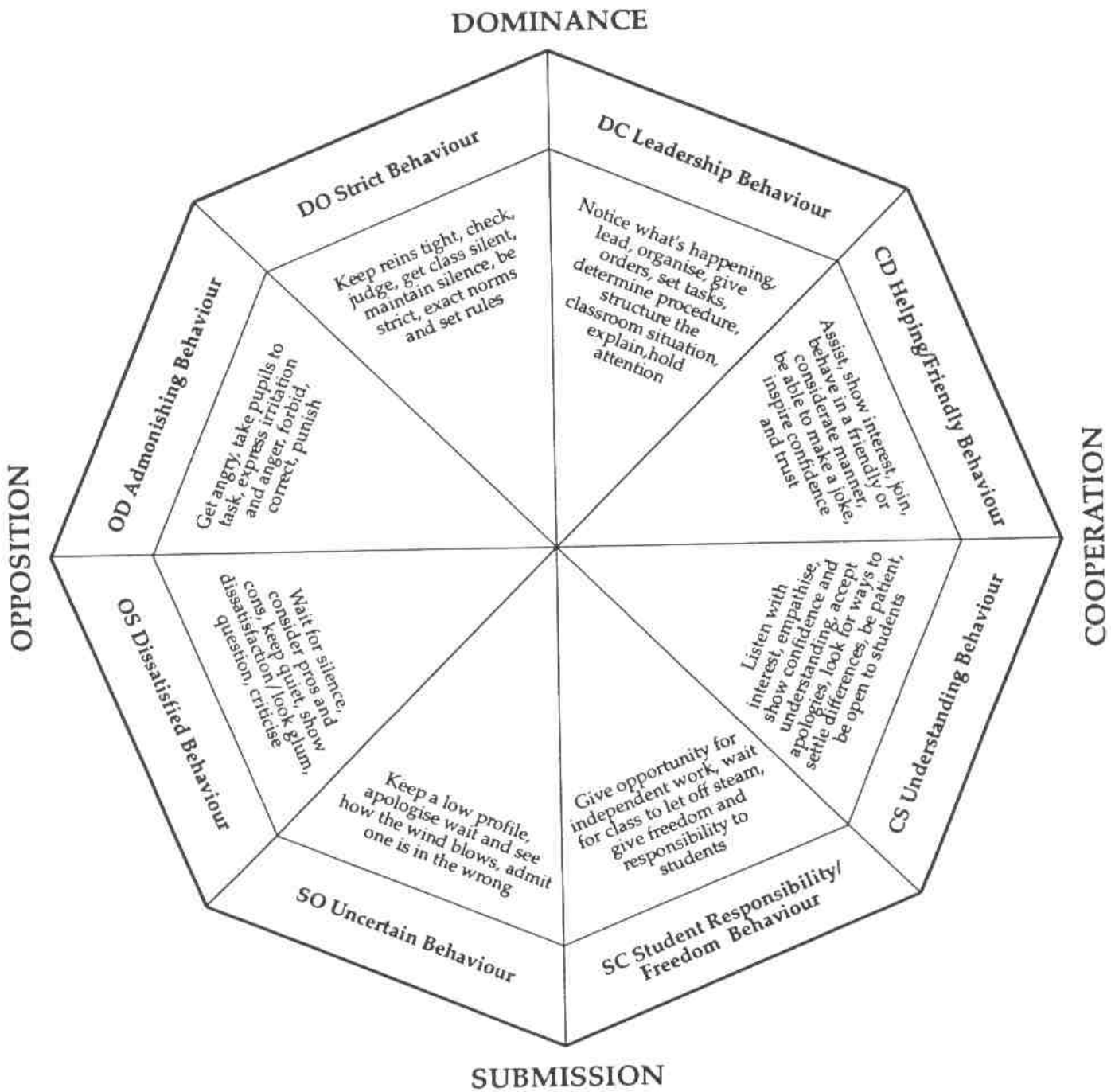
49. The teacher gives as much attention to my questions as to other students' questions.
50. I get the same amount of help from the teacher as do other students.
51. I have the same amount of say in this class as other students.
52. I am treated the same as other students in this class.
53. I receive the same encouragement from the teacher as other students do.
54. I get the same opportunity to contribute to class discussions as other students.
55. My work receives as much praise as other students' work.
56. I get the same opportunity to answer questions as other students.

Page 29 of Day 10 Session 1/ ED 407 Learning Environment/ 12.Learning Environment.pdf Page 10-- Learning Environment Measurement Scales

Page 29 of Day 10 Session 1/ ED 407 Learning Environment/ 12.Learning Environment.pdf Page 38-- Learning Environment Measurement Scales—Contructivist Learning Environment Survey

QUESTIONNAIRE ON TEACHER INTERACTION (QTI)

In order to facilitate hand scoring, the items are arranged in cyclic order and in blocks of four. Items 1 to 24 in the Supplement assess the four scales called *Leadership* behaviour, *Understanding* behaviour, *Uncertain* behaviour and *Admonishing* behaviour, whereas Items 25 to 48 assess the scales *Helpful/Friendly* behaviour, *Student Responsibility and Freedom* behaviour, *Dissatisfied* behaviour and *Strict* behaviour.


DOMINANCE
DO Strict Behaviour
DC Leadership Behaviour
CD Helping/Friendly Behaviour
OD Admonishing Behaviour
Keep reins tight, check, judge, get class silent, maintain silence, be strict, exact norms and set rules
Notice what's happening, lead, organise, give orders, set tasks, determine procedure, structure the classroom situation, explain,hold attention
Assist, show interest, join, behave in a friendly or considerate manner, be able to make a joke, inspire confidence and trust
Get angry, take pupils to task, express irritation and anger, forbid, correct, punish
OPPOSITION
COOPERATION
OS Dissatisfied Behaviour
CS Understanding Behaviour
Wait for silence, consider pros and cons, keep quiet, show dissatisfaction/look glum, question, criticise
Listen with interest, empathise, show confidence and understanding, accept apologies, look for ways to settle differences, be patient, be open to students
SO Uncertain Behaviour
SC Student Responsibility/ Freedom Behaviour
Keep a low profile, apologise wait and see how the wind blows, admit one is in the wrong
Give opportunity for independent work, wait for class to let off steam, give freedom and responsibility to students
SUBMISSION

	Never Always	Teacher Use
1. This teacher talks enthusiastically about her/his subject.	0 1 2 3 (4)	Lea
2. This teacher trusts us.	0 1 2 (3) 4	Und
3. This teacher seems uncertain.	0 (1) 2 3 4	Unc
4. This teacher gets angry unexpectedly.	(0) 1 2 3 4	Adm
5. This teacher explains things clearly.	0 1 2 (3) 4	Lea
6. If we don't agree with this teacher, we can talk about it.	0 1 (2) 3 4	Und
7. This teacher is hesitant.	(0) 1 2 3 4	Unc
8. This teacher gets angry quickly.	0 (1) 2 3 4	Adm
9. This teacher holds our attention.	0 1 2 (3) 4	Lea
10. This teacher is willing to explain things again.	0 1 (2) 3 4	Und
11. This teacher acts as if she/he does not know what to do.	0 1 (2) 3 4	Unc
12. This teacher is too quick to correct us when we break a rule.	0 1 (2) 3 4	Adm
13. This teacher knows everything that goes on in the classroom.	0 1 (2) 3 4	Lea
14. If we have something to say, this teacher will listen.	0 1 2 (3) 4	Und
15. This teacher lets us boss her/him around.	0 (1) 2 3 4	Unc
16. This teacher is impatient.	0 (1) 2 3 4	Adm

17. This teacher is a good leader.	0 1 2 (3) 4	Lea
18. This teacher realises when we don't understand.	0 1 2 3 (4)	Und
19. This teacher is not sure what to do when we fool around.	(0) 1 2 3 4	Unc
20. It is easy to pick a fight with this teacher.	0 1 2 3 4	Adm
21. This teacher acts confidently.	0 1 2 3 (4)	Lea
22. This teacher is patient.	0 1 2 (3) 4	Und
23. It's easy to make a fool out of this teacher	(0) 1 2 3 4	Unc
24. This teacher is sarcastic.	0 (1) 2 3 4	Adm

For Teacher's Use Only: Lea 19 Und 17 Unc 4 Adm 7

6.1 The Nature of the Curriculum

Interviews with teachers and students in both countries indicated that the nature of the curriculum could be a major influence on the learning environment created by teachers in each country. The story of a Taiwanese classroom describes a teacher-centered lesson in which students appear to play a fairly passive role. Without exception, the classes observed by the researcher in Taiwan were teacher-centered and, whilst the roles of the students varied between teachers, there were generally few opportunities for discussions or questions. Interviews with teachers revealed that the teacher-centered approaches were largely a result of the examination-driven nature of the curriculum:

The story describes the teacher's battle to fit the required content into each lesson and the desire of the teacher to avoid giving the students additional work. The science curriculum (for both biology and physics) is presented to students in the form of textbooks, and examinations are based on the content of these. As a result, it is important for teachers to cover all areas. Teachers whom were interviewed explained that teacher-centered methods were the most practical way to cover the content in the given time frame and diversions (described in the story as student questions referring to real-life situations) are often not possible given the time constraints:

In contrast, the Australian teachers whom were interviewed generally expressed a desire to use methods that were not teacher-centered in their science classes. Their reasons were varied, but generally it was felt that, by using a variety of approaches, students would be better able to develop a range of abilities in their students. In many cases, these teachers claimed that they were encouraged, through professional development days and by other staff, to use a variety of methods in their teaching.

Rote learning was frowned upon by many of the teachers interviewed in Australia and one commented that "developing the students' ability as learners is more important than the acquisition of content knowledge" (Interview, Teacher 1, p. 2). In general, these teachers were of the opinion that, by incorporating a range of teaching styles, they were more likely to cater for the range of learning styles that could be present in their class. In addition, they felt that their students were more likely to understand concepts if they were actively involved in their learning.

6.4 Questioning Techniques

Both stories describe the use of questioning in the classrooms, but it appears that the techniques used were different for the two countries. The question-and-answer session described in Australia depicts a teacher posing questions to the whole class and selecting only from students with their hands raised. Interviews with teachers indicated that they were careful not to damage the self-esteem of students and to ensure that the student's pride amongst his/her peers was protected. According to student interviews, many students were reluctant to raise their hands unless they were reasonably sure of the answer, while others made a point of never answering questions in class. Students explained that ridicule from peers was possibly the main reason for their reluctance to answer questions: "I usually don't like putting my hand up. ... If I get the answer wrong, then I get embarrassed [because] other kids in the class could laugh at me" (Australian Student A).

In contrast, teachers whom were observed in Taiwan (described in the story in Figure 2) randomly select students using the students' identity numbers (stitched above the pocket on their school shirts) rather than their names. The selected student stood up to answer the question and, if the answer was wrong, the teacher bluntly told him or her so. The student then either tried again or sat down and listened to the answer of another student. Interviews with students revealed that they were not uncomfortable with this method of questioning and that questions were used as a means of gauging what students need to know or what they do not understand to enable them to improve and learn. As one student put it, "When he [the teacher] teaches important content, he checks that we understand. So he asks us questions" (Taiwanese Student, Interview 2, Item 23).

APPENDIX A

Constructivist Learning Environment Survey

Actual Form

Directions for Students

These questionnaires contain statements about practices which could take place in this class. You will be asked how often each practice takes place.

There are no 'right' or 'wrong' answers. Your opinion is what is wanted. Think about how well each statement describes what this class is like for you.

Draw a circle around

1	if the practice takes place	**Almost Never**
2	if the practice takes place	**Seldom**
3	if the practice takes place	**Sometimes**
4	if the practice takes place	**Often**
5	if the practice takes place	**Almost Always**

Be sure to give an answer for all questions. If you change your mind about an answer, just cross it out and circle another.

Some statements in this questionnaire are fairly similar to other statements. Don't worry about this. Simply give your opinion about all statements.

Practice Example

Suppose you were given the statement 'I choose my partners for group discussion'. You would need to decide whether you choose your partners 'Almost always', 'Often', 'Sometimes', 'Seldom' or 'Almost never'. If you selected 'Often', then you would circle the number 2 on your questionnaire.

Learning about the world	**Almost Never**	**Seldom**	**Some-times**	**Often**	**Almost Always**
In this class . . .					
1. I learn about the world outside of school.	1	2	3	4	5
2. My new learning starts with problems about the world outside of school.	1	2	3	4	5
3. I learn how science can be part of my out-of-school life.	1	2	3	4	5
In this class . . .					
4. I get a better understanding of the world outside of school.	1	2	3	4	5
5. I learn interesting things about the world outside of school.	1	2	3	4	5
6. What I learn has nothing to do with my out-of-school life.	1	2	3	4	5
Learning about science	**Almost Never**	**Seldom**	**Some-times**	**Often**	**Almost Always**

of-school life.

Learning about science	Almost Never	Seldom	Some-times	Often	Almost Always
In this class . . .					
7. I learn that science cannot provide perfect answers to problems.	1	2	3	4	5
8. I learn that science has changed over time.	1	2	3	4	5
9. I learn that science is influenced by people's values and opinions.	1	2	3	4	5
In this class . . .					
10. I learn about the different sciences used by people in other cultures.	1	2	3	4	5
11. I learn that modern science is different from the science of long ago.	1	2	3	4	5
12. I learn that science is about creating theories.	1	2	3	4	5

12.	I learn that science is about creating theories.	1	2	3	4	5
Learning to speak out		Almost Never	Seldom	Some-times	Often	Almost Always
In this class . . .						
13.	It's OK for me to ask the teacher 'Why do I have to learn this?'	1	2	3	4	5
14.	It's OK for me to question the way I'm being taught.	1	2	3	4	5
15.	It's OK for me to complain about teaching activities that are confusing.	1	2	3	4	5
In this class . . .						
16.	It's OK for me to complain about anything that prevents me from learning.	1	2	3	4	5
17.	It's OK for me to express my opinion.	1	2	3	4	5
18.	It's OK for me to speak up for my rights.	1	2	3	4	5

Learning to learn	Almost Never	Seldom	Some-times	Often	Almost Always
In this class . . .					
19. I help the teacher to plan what I'm going to learn.	1	2	3	4	5
20. I help the teacher to decide how well I am learning.	1	2	3	4	5
21. I help the teacher to decide which activities are best for me.	1	2	3	4	5
In this class . . .					
22. I help the teacher to decide how much time I spend on learning activities.	1	2	3	4	5
23. I help the teacher to decide which activities I do.	1	2	3	4	5
24. I help the teacher to assess my learning.	1	2	3	4	5

Learning to communicate	Almost Never	Seldom	Some-times	Often	Almost Always
In this class . . .					
25. I get the chance to talk to other students.	1	2	3	4	5
26. I talk with other students about how to solve problems.	1	2	3	4	5
27. I explain my understandings to other students.	1	2	3	4	5
In this class . . .					
28. I ask other students to explain their thoughts.	1	2	3	4	5
29. Other students ask me to explain my ideas.	1	2	3	4	5
30. Other students explain their ideas to me.	1	2	3	4	5

SUPPLEMENT B

MY CLASS INVENTORY

STUDENT PREFERRED SHORT FORM

DIRECTIONS

This is not a test. The questions are to find out what you would **like or prefer** your class to be like.

Each sentence is meant to describe what your preferred class is like. Draw a circle around

YES if you AGREE with the sentence
NO if you DON'T AGREE with the sentence.

EXAMPLE

27. Most pupils in our class would be good friends.

If you **agree** that you'd prefer that most pupils in the class would be good friends, circle the **Yes** like this:

(Yes) No

If you **don't agree** that you would prefer that most pupils in the class would be good friends, circle the **No** like this:

Yes (No)

Please answer all questions. If you change your mind about an answer, just cross it out and circle the new answer. Don't forget to write your name and other details below.

NAME _____ SCHOOL _____ CLASS _____

Remember you are describing your preferred classroom		Circle Your Answer	For Teacher's Use
1.	The pupils would enjoy their schoolwork in my class.	Yes No	____
2.	Pupils would be always fighting with each other.	Yes No	____
3.	Pupils often would race to see who can finish first.	Yes No	____
4.	In my class the work would be hard to do.	Yes No	____
5.	In my class everybody would be my friend.	Yes No	____
6.	Some pupils wouldn't be happy in my class.	Yes No	R ____
7.	Some pupils in my class would be mean.	Yes No	____
8.	Most pupils would want their work to be better than their friend's work.	Yes No	____
9.	Most pupils would be able to do their schoolwork without help.	Yes No	R ____
10.	Some pupils in my class would not be my friends.	Yes No	R ____
11.	Pupils would seem to like my class.		

	[illegible]	Yes	No	R ___
11.	Pupils would seem to like my class.	Yes	No	___
12.	Many pupils in my class would like to fight.	Yes	No	___
13.	Some pupils would feel bad when they didn't do as well as the others.	Yes	No	___
14.	Only the smart pupils would be able to do their work.	Yes	No	___
15.	All pupils in my class would be close friends.	Yes	No	___
16.	Some pupils wouldn't like my class.	Yes	No	R ___
17.	Certain pupils always would want to have their own way.	Yes	No	___
18.	Some pupils always would try to do their work better than the others.	Yes	No	___
19.	Schoolwork would be hard to do.	Yes	No	___
20.	All pupils in my class would like one another.	Yes	No	___

21.	My class would be fun.	Yes	No	___
22.	Pupils in my class would fight a lot.	Yes	No	___
23.	A few pupils in my class would want to be first all of the time.	Yes	No	___
24.	Most pupils in my class would know how to do their work.	Yes	No	R ___
25.	Pupils in my class would like each other as friends.	Yes	No	___

For Teacher's Use Only: S F Cm ___ D ___ Ch ___

This page is a supplement to a publication entitled *Assessing and Improving Classroom Environment* authored by Barry J. Fraser and published by the Key Centre for School Science and Mathematics at Curtin University.

TABLE 1. Descriptive Information for Each Scale

Scale Name	Description	Sample Item
Student Cohesiveness	Extent to which students know, help and are supportive of one another.	I get along well with students in this laboratory class. (+)
Open-Endedness	Extent to which the laboratory activities emphasize an open-ended divergent approach to experimentation.	In my laboratory sessions, the teacher decides the best way for me to carry out the laboratory experiments. (-)
Integration	Extent to which the laboratory activities are integrated with non-laboratory and theory classes.	I use the theory from my regular science class sessions during laboratory activities. (+)
Rule Clarity	Extent to which behaviour in the laboratory is guided by formal rules.	There is a recognized way for me to do things safely in this laboratory. (+)
Material Environment	Extent to which the laboratory equipment and materials are adequate.	I find that the laboratory is crowded when I am doing experiments. (-)

FIGURE 1. Illustration of Hand Scoring Procedures

*Remember that you are describing your **actual** classroom.*	Almost Never / Seldom / Sometimes / Often / Very Often	For Teacher's Use
1. I get on well with students in this laboratory class.	1 2 3 4 (5)	5
2. There is opportunity for me to pursue my own science interests in this laboratory class.	1 2 3 4 5	
3. What I do in our regular science class is unrelated to my laboratory work.	1 2 3 4 5	R
4. My laboratory class has clear rules to guide my activities.	1 2 3 4 5	
5. I find that the laboratory is crowded when I am doing experiments.	1 2 3 4 (5)	R 1
6. I have little chance to get to know other students in this laboratory class.	(1) 2 3 4 5	R 5
7. In this laboratory class, I am required to design my own experiments to solve a given problem.	1 2 3 4 5	
8. The laboratory work is unrelated to the topics that I am studying in my science class.	1 2 3 4 5	R
9. My laboratory class is rather informal and few rules are imposed on me.	1 2 3 4 5	R
10. The equipment and materials that I need for laboratory activities are readily available.	1 (2) 3 4 5	2

11.	Members of this laboratory class help me.	1 2 3 (4) 5		4
12.	In my laboratory sessions, other students collect different data than I do for the same problem.	1 2 3 4 5		
13.	My regular science class work is integrated with laboratory activities.	1 2 3 4 5		
14.	I am required to follow certain rules in the laboratory.	1 2 3 4 5		
15.	I am ashamed of the appearance of this laboratory.	1 2 (3) 4 5	R	3
16.	I get to know students in this laboratory class well.	1 (2) 3 4 5		2
17.	I am allowed to go beyond the regular laboratory exercise and do some experimenting of my own.	1 2 3 4 5		
18.	I use the theory from my regular science class sessions during laboratory activities.	1 2 3 4 5		
19.	There is a recognized way for me to do things safely in this laboratory.	1 2 3 4 5		
20.	The laboratory equipment which I use is in poor working order.	1 (2) 3 4 5	R	4

21.	I am able to depend on other students for help during laboratory classes.	1 2 (3) 4 5		3
22.	In my laboratory sessions, I do different experiments than some of the other students.	1 2 3 4 5		
23.	The topics covered in regular science class work are quite different from topics with which I deal in laboratory sessions.	1 2 3 4 5	R	
24.	There are few fixed rules for me to follow in laboratory sessions.	1 2 3 4 5	R	
25.	I find that the laboratory is hot and stuffy.	1 2 3 (4) 5	R	2
26.	It takes me a long time to get to know everybody by his/her first name in this laboratory class.	1 2 3 (4) 5	R	2
27.	In my laboratory sessions, the teacher/instructor decides the best way for me to carry out the laboratory experiments.	1 2 3 4 5	R	
28.	What I do in laboratory sessions helps me to understand the theory covered in regular science classes.	1 2 3 4 5		
29.	The teacher/instructor outlines safety precautions to me before my laboratory sessions commence.	1 2 3 4 5		
30.	The laboratory is an attractive place for me to work in.	1 (2) 3 (4) 5		3

30.	The laboratory is an attractive place for me to work in.	1 (2) 3 (4) 5	3
31.	I work cooperatively in laboratory sessions.	1 (2) 3 4 5	2
32.	I decide the best way to proceed during laboratory experiments.	1 2 3 4 5	
33.	My laboratory work and regular science class work are unrelated.	1 2 3 4 5	R
34.	My laboratory class is run under clearer rules than my other classes.	1 2 3 4 5	
35.	My laboratory has enough room for individual or group work.	1 2 3 (4) 5	4

For Teacher's Use Only: SC 23 OE _____ I _____ RC _____ ME 19

SUPPLEMENT A

SCIENCE LABORATORY ENVIRONMENT INVENTORY (SLEI)

ACTUAL FORM

Directions

This questionnaire contains statements about practices which could take place in this laboratory class. You will be asked **how often** each practice **actually takes place.**

There are no 'right' or 'wrong' answers. Your opinion is what is wanted.

Think about how well each statement describes what this laboratory class is actually like for you. Draw a circle around

1	if the practice actually takes place	ALMOST NEVER
2	if the practice actually takes place	SELDOM
3	if the practice actually takes place	SOMETIMES
4	if the practice actually takes place	OFTEN
5	if the practice actually takes place	VERY OFTEN

Be sure to give an answer for all questions. If you change your mind about an answer, just cross it out and circle another.

Some statements in this questionnaire are fairly similar to other statements. Don't worry about this. Simply give your opinion about all statements.

Practice Example. Suppose that you were given the statement: "I choose my partners for laboratory experiments." You would need to decide whether you thought that you **actually** choose your partners *Almost Never*, *Seldom*, *Sometimes*, *Often* or *Very Often*. For example, if you selected *Very Often*, you would circle the number 5 on your Answer Sheet.

Don't forget to write your name and other details at the top of the reverse side of this page.

NAME _____ SCHOOL _____ CLASS _____

*Remember that you are describing your **actual** classroom.*	Almost Never Seldom Sometimes Often Very Often	For Teacher's Use
1. I get on well with students in this laboratory class.	1 2 3 4 5	____
2. There is opportunity for me to pursue my own science interests in this laboratory class.	1 2 3 4 5	____
3. What I do in our regular science class is unrelated to my laboratory work.	1 2 3 4 5	R ____
4. My laboratory class has clear rules to guide my activities.	1 2 3 4 5	____
5. I find that the laboratory is crowded when I am doing experiments.	1 2 3 4 5	R ____
6. I have little chance to get to know other students in this laboratory class.	1 2 3 4 5	R ____
7. In this laboratory class, I am required to design my own experiments to solve a given problem.	1 2 3 4 5	____
8. The laboratory work is unrelated to the topics that I am studying in my science class.	1 2 3 4 5	R ____
9. My laboratory class is rather informal and few rules are imposed on me.	1 2 3 4 5	R ____
10. The equipment and materials that I need for laboratory activities are readily available.	1 2 3 4 5	____

11. Members of this laboratory class help me.	1 2 3 4 5	____
12. In my laboratory sessions, other students collect different data than I do for the same problem.	1 2 3 4 5	____
13. My regular science class work is integrated with laboratory activities.	1 2 3 4 5	____
14. I am required to follow certain rules in the laboratory.	1 2 3 4 5	____
15. I am ashamed of the appearance of this laboratory.	1 2 3 4 5	R ____
16. I get to know students in this laboratory class well.	1 2 3 4 5	____
17. I am allowed to go beyond the regular laboratory exercise and do some experimenting of my own.	1 2 3 4 5	____
18. I use the theory from my regular science class sessions during laboratory activities.	1 2 3 4 5	____
19. There is a recognized way for me to do things safely in this laboratory.	1 2 3 4 5	____
20. The laboratory equipment which I use is in poor working order.	1 2 3 4 5	R ____

21. I am able to depend on other students for help during laboratory classes.	1 2 3 4 5	____
22. In my laboratory sessions, I do different experiments than some of the other students.	1 2 3 4 5	____
23. The topics covered in regular science class work are quite different from topics with which I deal in laboratory sessions.	1 2 3 4 5	R ____
24. There are few fixed rules for me to follow in laboratory sessions.	1 2 3 4 5	R ____
25. I find that the laboratory is hot and stuffy.	1 2 3 4 5	R ____
26. It takes me a long time to get to know everybody by his/her first name in this laboratory class.	1 2 3 4 5	R ____
27. In my laboratory sessions, the teacher decides the best way for me to carry out the laboratory experiments.	1 2 3 4 5	R ____
28. What I do in laboratory sessions helps me to understand the theory covered in regular science classes.	1 2 3 4 5	____
29. The teacher outlines safety precautions to me before my laboratory sessions commence.	1 2 3 4 5	____
30. The laboratory is an attractive place for me to work in.	1 2 3 4 5	____

30. The laboratory is an attractive place for me to work in.		
31. I work cooperatively in laboratory sessions.	1 2 3 4 5	____
32. I decide the best way to proceed during laboratory experiments.	1 2 3 4 5	____
33. My laboratory work and regular science class work are unrelated.	1 2 3 4 5	R ____
34. My laboratory class is run under clearer rules than my other classes.	1 2 3 4 5	____
35. My laboratory has enough room for individual or group work.	1 2 3 4 5	____

For Teacher's Use Only: SC _____ OE _____ I _____ RC _____ ME _____

SCIENCE LABORATORY ENVIRONMENT INVENTORY (SLEI)

PREFERRED FORM

Directions

This questionnaire contains statements about practices which could take place in this laboratory class. You will be asked **how often** you would **prefer** each practice to take place.

There are no 'right' or 'wrong' answers. Your opinion is what is wanted.

Think about how well each statement describes what your preferred laboratory class is like. Draw a circle around

1	if you would prefer the practice to take place	ALMOST NEVER
2	if you would prefer the practice to take place	SELDOM
3	if you would prefer the practice to take place	SOMETIMES
4	if you would prefer the practice to take place	OFTEN
5	if you would prefer the practice to take place	VERY OFTEN

Be sure to give an answer for all questions. If you change your mind about an answer, just cross it out and circle another.

Some statements in this questionnaire are fairly similar to other statements. Don't worry about this. Simply give your opinion about all statements.

Practice Example. Suppose that you were given the statement: "I would choose my partners for laboratory experiments." You would need to decide whether you thought that you would **prefer** to choose your partners *Almost Never*, *Seldom*, *Sometimes*, *Often* or *Very Often*. For example, if you selected *Very Often*, you would circle the number 5 on your Answer Sheet.

Don't forget to write your name and other details at the top of the reverse side of this page.

NAME _____ SCHOOL _____ CLASS _____

*Remember that you are describing your **preferred** classroom.*	Almost Never Seldom Sometimes Often Very Often	For Teacher's Use
1. I would get on well with students in this laboratory class.	1 2 3 4 5	____
2. There would be opportunity for me to pursue my own science interests in this laboratory class.	1 2 3 4 5	____
3. What I do in our regular science class would be unrelated to my laboratory work.	1 2 3 4 5	R ____
4. My laboratory class would have clear rules to guide my activities.	1 2 3 4 5	____
5. I would find that the laboratory is crowded when I am doing experiments.	1 2 3 4 5	R ____
6. I would have little chance to get to know other students in this laboratory class.	1 2 3 4 5	R ____
7. In this laboratory class, I would be required to design my own experiments to solve a given problem.	1 2 3 4 5	____
8. The laboratory work would be unrelated to the topics that I am studying in my science class.	1 2 3 4 5	R ____
9. My laboratory class would be rather informal and few rules would be imposed on me.	1 2 3 4 5	____
10. The equipment and materials that I need for laboratory activities would be readily available.	1 2 3 4 5	____

11. Members of this laboratory class would help me.	1 2 3 4 5	____
12. In my laboratory sessions, other students would collect different data than I would for the same problem.	1 2 3 4 5	____
13. My regular science class work would be integrated with laboratory activities.	1 2 3 4 5	____
14. I would be required to follow certain rules in the laboratory.	1 2 3 4 5	____
15. I would be ashamed of the appearance of this laboratory.	1 2 3 4 5	R ____
16. I would get to know students in this laboratory class well.	1 2 3 4 5	____
17. I would be allowed to go beyond the regular laboratory exercise and do some experimenting of my own.	1 2 3 4 5	____
18. I would use the theory from my regular science class sessions during laboratory activities.	1 2 3 4 5	____
19. There would be a recognized way for me to do things safely in this laboratory.	1 2 3 4 5	____
20. The laboratory equipment which I use would be in poor working order.	1 2 3 4 5	R ____

21. I would be able to depend on other students for help during laboratory classes.	1 2 3 4 5	____
22. In my laboratory sessions, I would do different experiments than some of the other students.	1 2 3 4 5	____
23. The topics covered in regular science class work would be quite different from topics with which I deal in laboratory sessions.	1 2 3 4 5	R ____
24. There would be few fixed rules for me to follow in laboratory sessions.	1 2 3 4 5	R ____
25. I would find that the laboratory is hot and stuffy.	1 2 3 4 5	R ____
26. It would take me a long time to get to know everybody by his/her first name in this laboratory class.	1 2 3 4 5	R ____
27. In my laboratory sessions, the teacher would decide the best way for me to carry out the laboratory experiments.	1 2 3 4 5	R ____
28. What I do in laboratory sessions would help me to understand the theory covered in regular science classes.	1 2 3 4 5	____
29. The teacher would outline safety precautions to me before my laboratory sessions commence.	1 2 3 4 5	____
30. The laboratory would be an attractive place for me to work in.	1 2 3 4 5	____

31. I would work cooperatively in laboratory sessions.	1 2 3 4 5	____
32. I would decide the best way to proceed during laboratory experiments.	1 2 3 4 5	____
33. My laboratory work and regular science class work would be unrelated.	1 2 3 4 5	R ____
34. My laboratory class would be run under clearer rules than my other classes.	1 2 3 4 5	____
35. My laboratory would have enough room for individual or group work.	1 2 3 4 5	____

For Teacher's Use Only: SC _____ OE _____ I _____ RC _____ ME _____

Leadership

● Management has its start point in the organisation. It is taken to involve the conduct and evolutionary development of an institution and its staff by means of rational decisions and performance monitoring underpinned by information systems, policies, procedures and plans. ● Leadership has a start point in the people within the organisation. It is concerned with getting their willing cooperation and contribution towards organisational goals and with meeting their needs as individuals.

● Just as ‘managers’ exist at all levels of the organisation so, too, can leaders be found at all levels. The latter do not necessarily depend on a formal role position. ● Both activities, leading and managing, are required. The balance between each activity varies both from time to time and also from the position of an individual within an organisation.

Both activities, leading and managing, are required. The balance between each activity varies both from time to time and also from the position of an individual within an organisation. 2 Leadership issues: raising achievement

- Whether one activity subsumes the other or whether management and leadership exist as poles of activity along a continuum does not have any bearing on the argument presented.
- Incorporation and the essential need to run an efficient and effective organisation have made it inevitable that there has been an emphasis on the top levels of colleges and upon the managerial activities of senior management. Leadership has always been required at that level. Our interest lies in improving the impact of leadership activity at lower levels in colleges.

● These lower levels are those at which course organisation and delivery by a group of staff is the key activity. If leadership is to have a more direct impact on student achievement than is the case with the mediated leadership activity of senior post-holders, then this lower level may be the one level to examine in more detail.

Leadership in further education

- clarification of what we mean by leadership, particularly within an educational context
- an outline of a number of models of, or approaches to, leadership
- a description of the key behaviours which are associated with effective leadership
- leadership roles within organisations
- how leadership impacts on student outcomes

Features of leadership

- leadership is a process of influencing
- leadership can be exercised by people in organisations who do not possess formal authority
- leadership implies followers
- leadership involves the achievement of goals or objectives

What does leadership look like?

Instructional leadership

It focuses on the development of behaviours that directly influence teachers in their relationships with students and, in particular, the planning and delivery of teaching and learning.

Transformational leadership

Idealised influence – the ability of the leader to gain the trust, respect and support of those being led. This might otherwise be termed charisma which brings it close to the traits concept of leadership.

- Inspirational motivation – the ability to inspire and focus the attention of individuals on the achievement of shared goals, often using imagery and symbols.

- Intellectual stimulation – a culture of challenge and questioning where individuals are constantly encouraged to reassess both ways of working and the values of the organisation including those of the leader.

- **Individualised consideration – the support that is available to individuals to allow them to develop in order to meet new challenges and goals.**

Moral leadership

Moral leadership is based on the assumption that educational and other organisations operate within a framework of absolute values.

The leader's role is to:

- influence the adoption of a clear set of organisational values
- manage conflict over the interpretation of basic values
- commit others to the values that leaders themselves believe to be good.

Participative leadership

Participative leadership In common with moral leadership, participative leadership emphasises consultation and the importance of the decision-making processes of the group. Unlike moral leadership, however, participation and consultation are usually based on more pragmatic decision making needs rather than on any ideas of ‘moral rightness’ or ‘what ought to be’. The need to establish a sense of ownership of decisions usually underpins use of the model.

Participative leadership can be seen as leading to:

- **better quality decisions**
- **greater consensus and acceptance**
- **better understanding of the decision by those responsible for implementing it**
- **the development of decision-making skills throughout the organisation**

- enhanced motivation and job satisfaction for staff involved in decision-making
- resolution of conflict and the development of the team. However, participative leadership often results in conflicts associated with:
- the need for consensus and at the same time the need for strong and authoritative leadership

- the need to consult and involve while at the same time making decisions which are timely and efficient in terms of the resources used
- the need to reconcile accountability for the implementation of externally derived policy with the values and systems orientation of staff within a school or college

Managerial leadership

This model of leadership is strongly evidenced in further education.

The model is sometimes referred to as transactional or functional and is widely associated with writer John Adair.

Teams and teamworking are important in the model, and the leader's primary responsibility is to balance the needs of the team, the task on which the team is engaged, and the individual needs of team members.

The leadership role is strongly associated with the team leader rather than any of the other team members and there is therefore an emphasis on leader training and skills development.

Contingent leadership

Closely related to the managerial leadership model is contingent or situational leadership. Leadership is viewed as situationally focused – in other words variations in the contexts for decision-making require different leadership responses. Leaders therefore need to master a range of leadership practices including the development of different leadership styles that can be adopted in varied settings.

Organisational learning The concept of the learning organisation developed during the late 1980s and early 1990s. It is often associated with the work of Peter Senge. Senge's view was that just as individuals have the capacity to continually learn, so too do organisations.

This new type of organisation requires a new type of leadership – one in which the purpose of leadership is to build organisational capacity for learning.

The leader has three important roles to perform:

- As designer, the leader's role is to design the organisational learning process so that people are able to solve problems and achieve personal mastery. This requires new leadership behaviours including coaching, mentoring and helping others to learn.

- As steward, the leader has a responsibility not only for developing a personal vision for the organisation but ensuring that the vision reflects the common aspirations of others working in it.
- As teacher, the leader's role is not just about coaching and supporting individuals but more importantly about developing 'systemic understanding' – the ability to see how the various parts of the organisation fit together and inter-relate, and how learning can be transferred from one section or from one situation to another (Senge 1990).

LEADERSHIP IN CHANGE MANAGEMENT

A NEW MODEL OF LEADERSHIP

It has been argued that the traditional style of management is inappropriate for today's organisation. A more flexible, responsive leader displaying high trust, participative management styles is needed to replace the autocratic, individualised, competitive leader who was found to be effective in the past (Smith & Hutchinson 1995, 93)

THE MANAGERS

Future TAFE managers need the 'soft' or 'people' skills that have been described by many management theorists (Feuer 1988; Randell 1993; Smith & Hutchinson 1995) according to the participants in this study. Words used by participants to describe these managers included integrity, honesty, sincerity, humbleness, courage, openness, trust, empowering, supporting, developing, empathetic, flexible, team centred, adaptable, encouraging, approachable, fair and ethical.

From management to leadership

The shift from management to leadership has been brought about by the fundamental requirement for people to cope with the management of change. John Kotter (1990) suggested that management is about planning, organising and controlling, whereas leadership is about setting direction, aligning people – and motivating and inspiring them. It is fundamentally about people.

THE MANAGER	THE LEADER
Administers Is a copy Maintains Focuses on systems Relies on control Short-range view Asks how and when Eye on the bottom line Imitates Accepts the status quo Obeys orders without question Does things right Is trained Managers operate within the culture.	Innovates Is an original Develops Focuses on people Inspires trust Long-range view Asks what and why Eye on the horizon Originates Challenges the status quo Obeys when appropriate but thinks Does the right things Learns Leaders create the culture.

The leadership competencies

- First, leaders need to set the direction for the organisation, which incorporates a vision of the future.
- Second, effective leaders are influential examples and role models because they are aware that people are more influenced by what they see than by what they are told.

- Third, they are effective communicators, both in communicating the vision, and also inspiring their people in such a way that it causes an emotional effect.
- Fourth, provided that the leader is convincing, followers will want to be part of the operation and work towards the common goal themselves. This process is one of alignment.

- Fifth, effective leaders bring out the best in people. This involves a holistic approach which embraces motivation, empowerment, coaching and encouragement.
- Sixth, leaders need to be proactive in a situation of continual change. In effect, they become change agents.
- The seventh attribute is the ability to make decisions in times of crisis and for the ambiguous.

These seven competencies, which are discussed in detail in The business of leadership (Hooper and Potter 1997), are the skills required to lead effectively at all levels, in the appropriate style, in order to add value to an organisation. In addition, these competencies enable leaders to make significant improvement to the performance of their organisations.

Effective communications

Part of the process of creating understanding is effective communications. It is particularly difficult when managing change, because leaders are often struggling to clarify their own thinking as well as trying to communicate a clear message. Unless there is clarity of thought, there is a danger that leaders will give a mixed message, which can lead to confusion. The important first step is to have a clear strategy right from the outset. Once the general way forward is clear, it is essential that the senior management team maintain open communications with every individual in that group.

Change Management Approach

Traditional Change Management Approach & Participative Change Management Approach

Read the provided article “Change Management Approach.pdf” & “Helping People Adapt”

TRADITIONAL CHANGE MANAGEMENT APPROACH

For a number of decades the dominant paradigm has been the traditional change management approach. It is best represented by the viewpoint that leaders and managers are solely responsible for making the key decisions within an organisation and are also accountable for ensuring successful change management processes. The focus in the literature is about

managing the transition and specifically overcoming resistance to change (Hay and Hartel, 2000; Maurer 1996; Tichy, 1983; Quinn, 1978; March and Simon, 1958). Senior managers 'worry a lot' about change but too few of these concerns are focused on building rapport with the affected staff. Much of the focus instead is with providing legitimate justification for the need for the change. They avoid dealing with the tougher issues of staff perception of hidden agendas and unsurfaced rationale(s) rooted in self-interest and the exercise of managerial power.

Resistance to change (once seen as inevitable) when manifested can be resolved through a number of mechanisms. Argyris and Kaplan's (1994) study of the implementation of activity based costing identified three processes to overcome barriers to change that exist at the individual, group, intergroup and organisational levels. These included education and training to explain the need for change and reduce fear of the unknown; sponsorship of the process by key individuals who then persuade others; and, alignment of incentives such that systems and structures reward and reinforce effective change.

PARTICIPATIVE CHANGE MANAGEMENT APPROACH

There is a need to alter the approach and shift the focus within the extant literature with its prescriptive edge that attempts to deliver more successful change management and implementation with the concomitant emphasis on identifying and overcoming employee resistance (Waldersee and Griffiths, 1997; Clarke, 1994; Kanter, Stein and Jick, 1992;

EFFECTIVE WAY OF CHANGE MANAGEMENT

Carnall, 1990). The alternative is to involve employees from the beginning by permitting and encouraging active involvement, full participation in and psychological ownership of the change process.

This would act as an effective counterfoil to the shortcomings of management '...failing to communicate a vision, planning problems, not matching vision with processes, not being committed to the change process, failing to lead by example, demonstrating inconsistencies of attitudes to change' (Waldersee and Griffiths, 1997, p. 10).

The first step is to rethink the existing negative notion of resistance. Waddell and Sohal (1998, p. 5) argue that one should consider the utility of resistance in '...injecting energy into the change process' and that it '...encourages the search for alternative methods and outcomes in order to synthesise the conflicting opinions that may exist.' This means that resistance can be a positive force and a critical source of innovation during a change process to ensure that many more possibilities are examined and evaluated closely.[4] What we advocate then is to recast the notion of resistance so that it is viewed instead as the active encouragement of constructive conflict. This avoids what can happen if overt resistance is itself merely resisted and battered down (usually by information overload) by senior managers. This resistance can become more intense and covert, effectively derailing the change process.

The next step is to utilise an action framework that has a collective and collaborative approach to decision-making and the change process. The management role becomes one of facilitation not the usual top-down dictatorial change management decision-making process. The intellectual underpinning for this move comes from action learning and action research methodologies, which are oriented to both change

and learning/research within organisations. They are participative and egalitarian and have a problem/solution orientation that is recursive (cyclic in nature). As a result they are empowering, engender greater ownership of the outcome(s) and are also reflexive, flexible and responsive to the organisational context and constraints (Sankaran et al., 2001).

Under this approach the affected employees form groups that are empowered to consider, debate alternatives, construct outcome(s) and actively engage in and manage the change process from both a bottom up and a top down perspective. Senior managers and employees are equal and active participants in the change process. The result is a more effective organisational change with enhanced employee engagement in, and ownership of, the outcome(s) and minimising, if not eliminating, resistance.

FURTHER READINGS & TEXTBOOKS

Textbook

ED 308 Change Management

http://www.filefactory.com/file/4cxrjx86buot/n/9_Leadership_Change_Management_zip

ED 402 Educational Leadership

http://www.filefactory.com/file/68h2rewfq7jx/ED%20402%20Educational%20Leadership.zip