|  |
| --- |
| Work-Based Challenge |
| B.Com (Business Management)WBC100/200/300 |
| Learner Guide |
| Latest Review: May 2016 |



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**TOPIC 1: INTRODUCTION TO DA VINCI RESEARCH**

# PURPOSE OF THIS MODULE

#

This Work-based Challenge (WBC) module aims to equip you with the skills and knowledge that will allow you the address the burning issues or challenges that you have identified in your workplace, as part of your learning journey with the Da Vinci Institute. The Work Based Challenge is the student’s statement of ‘who I am in the workplace’. It is the ‘first piece’ of work and must be used to anchor all other learning Da Vinci. It is a reiterative assignment spanning over the three years and will culminate in an academic research report.

By working with your facilitator you will identify a suitable work-based challenge and specific research methodologies that will enable you to address the challenge that you have identified. You will explore this challenge for the duration of your B Com studies. The Work-Based Challenge should be seen as a “work in progress”. During your first year, you will be required to identify your WBC by setting the context, outlining the research problem and defining the aim and objectives of the study. During your second year, you are required to conduct a detailed literature review regarding your WBC and to identify a specific research design and method to conduct your research. During the third year you will have the opportunity “to put it all together” by including the following: chapters already submitted under WBC100 and WBC200, an including a description of the fieldwork, a description of your research results and a description of your conclusion and recommendations for further research.

#

# LEARNING OUTCOMES

* + 1. **B.Com Year I (4 credits):**

On completion of this module, students should be able to:

* give an overview of what constitutes a WBC
* indicate why a WBC may affect the performance of employees and/or the organization
* define a research problem
* define an aim and objectives for a research project.
	+ 1. **B.Com Year II (8 credits):**

On completion of this module, students should be able to:

* conduct a detailed literature review to show their understanding of the WBC
* compile a detailed research design and methodology chapter.
	+ 1. **B.Com Year III (30 credits):**

On completion of this module, students should be able to:

* collect and analyse data obtained during their fieldwork
* draw conclusions and make recommendation for further research
* present and defend their study to a panel of experts.

Note: In year 3, integrate WBC 100 and WBC 200 chapters into the final research report (WBC300).

# TEACHING AND LEARNING APPROACH

## The learner guide

This *learner guide* is designed to serve as a guide for the duration of the contact sessions and as a framework resource post the workshop sessions. It does NOT cover all content in detail, but it is intended as a broad framework that will assist you during workshop discussions in developing the skills and knowledge as stipulated in the learning outcomes for each module.

Do not try to follow along in the learner guide as the facilitator takes you through the material because it is intended to stimulate discussions during the facilitation which will be conducted as a workshop and not a presented as series of lectures.

We suggest that you:

* make notes and diagrams that will help you to clarify or retain information after completion of activities in class
* jot down things that work well or ideas that come from the group. Also note any points you would like to explore further
* participate actively in the skill practice activities as they will give you an opportunity to gain insights from other people’s experiences
* do not forget to share your own experiences so that others can learn from you too.

##

## Experiential learning approach

An *experiential learning approach* will be followed throughout the learning process. This implies that the programme is:

* facilitated and not taught, with an emphasis on **self-discovery** derived through a number of practical activities, which are….
* followed by **practical application**, building on what has been discovered by…
* **learning from each other’s** experiences, which will…
* result in the **ability to apply** the workshop content in the workplace

After the initial workshop with your facilitator, you will be provided with additional support through Moodle, Da Vinci’s e-learning platform.

## Prescribed and recommended reading

Review of additional study material is not compulsory; however, at a degree level it will assist you in writing your work-based challenge and you therefore are expected to consult a wide variety of sources such as textbooks, articles, company publications and relevant websites.

## References specific to the modules are provided throughout the programme, and you are encouraged to do your own research as well. We would like to suggest that you share relevant and current research with your fellow students. As a departure from traditional learning and to make your experience more interactive, we have incorporated a number of different learning events, which should enable you to apply your learning. To guide you through the experience, you will find the following icons:

|  |  |
| --- | --- |
| C:\Users\Design\OneDrive\Icons\Other\Graduation.png |  **Research**As you work through the module, you will be required to do your own research. Although it is for your own knowledge, it would be to your advantage to plan your work in such a way that the data you gather can be used again. |
| C:\Users\Design\OneDrive\Icons\Applications\Koding.png |  **Reading**You will be provided with a series of international articles and literature to read that will help you broaden the subject at hand.  |
| C:\Users\Design\OneDrive\Icons\Applications\Yahoo Messenger.png |  **Group Discussion**Your facilitator will divide the class into groups for subject discussion purposes. You may be required to do group work both in the classroom and as syndicate study groups. Groups can be changes at any time. |
| C:\Users\Design\OneDrive\Icons\Folders & OS\Configure alt 2.png |  **Activity**Individual activity that has to be performed by the student. |
| C:\Users\Design\OneDrive\Icons\Other\Pin.png | **Take Note** A useful tip or an essential element regarding the concept under discussion. |
| C:\Users\Design\OneDrive\Icons\System Icons\Color Management.png | **Find it online**Up to date information on what is happening in the world or recent news online! |

# Additional reading

|  |  |
| --- | --- |
| C:\Users\Design\OneDrive\Icons\Applications\Koding.png |  **Reading**At this level of learning you are expected to read, read and read more. We have included some articles in the guide. Additional articles will be posted on Moodle. It is the responsibility of an adult learner to use the different online databases to find additional reading material. |

**Reading 1:**

MacLean, D., MacIntosh, R. and Grant, S. 2002. *Mode 2 Management Research.* British Journal of Management, Vol 13: 189-207.

**Reading 2:**

Kurtz, C.F. and Snowden, D.J. 2003. *The new dynamics of strategy: Sense-making in a complex and complicated world.* IBM Systems Journal, Vol 42(3).

**Reading 3:**

Lessem, R. (2001). *Managing in Four Worlds: Culture, Strategy and Transformation*. Long Range Planning (34) 9-32.

* 1. **LEARNING MAP**

The modules have been divided into 6 topics, each with its own set of specific learning objectives. The topics are as follows:

**Topic 1**

**Introduction to Da Vinci research**

**Topic 2**

**Roles and responsibilities in the key account office**

**Part Four**

**Preparing for the Proposal**

**Topic 4**

**Work-based challenge workshops and assessment processes**

**Topic 3**

**Introducing and selecting a work-based challenge**

**Topic 5**

**Practical guidelines for conducting research on a WBC**

**Topic 6**

**Putting it all together**

# TOPIC 02: ROLES AND RESPONSIBILITIES IN THE KEY ACCOUNT OFFICE

This topic outlines the roles and responsibilities in the key account office at the Da Vinci Institute.

**2.1 THE KEY ACCOUNT OFFICE**

Da Vinci’s Key Account Office provides guidance to all students and their facilitators who participate in identifying a work-based challenge (WBC) and is responsible for managing the academic performance at Da Vinci. In this regard, the Key Account Office acts in close consultation with the academic facilitators and their students. Research is aimed at becoming competitive at a national and international level, and the outputs are evaluated externally and internally.

**2.2 THE ROLE OF THE FACILITATOR**

The role of the facilitator is:

* to clarify the meaning and outcomes of the module and topics via this study guide
* to give the necessary background and context that will enable you to understand specific phenomena and or problems
* to stimulate your (critical) thinking so that you can evaluate and alter perspectives when necessary
* to provide a conducive atmosphere and guide you to solve whatever problems you might encounter with concepts, contexts and application
* to guide you toward successful completion of both your pre- and post-modular assignments
* to assess your pre and post-modular assignments and help you correct any misconceptions.

## 2.3 THE ROLE OF THE STUDENT

You are responsible for mastering the learning outcomes specified for the module. The facilitator is only a guide, as is the wrap-around guide! To master the module you need to study as effectively as possible. You are expected to supplement the contents of this guide with the reading of relevant sources from the online library. Most of the recommended sources can be found on the online library as well as on the internet.

As such, the module is introduced to you through one or more facilitated contact sessions, most or all of which are to be facilitated by faculty members of the Da Vinci Institute (Da Vinci). The contact sessions are designed to focus your mind on the module outcomes, to provoke your thinking about the main concepts and to introduce a theoretical background while linking the module content to the workplace.

The contact session will start by briefing you on the pre- and post-modular assignment (PWA and PMA), and you will complete one of these for this module.

# TOPIC 03: WORK BASED CHALLENGE WORKSHOPS AND ASSESSMENT PROCESSES

The work-based challenge workshops and assessment process is illustrated in Diagram 3.1 and discussed below.

**Practical guidelines for conducting research on a work based challenge**

**(Chapter 2 and 3)**

**Workshop 2 (1 day)**

**Introducing and selecting a work-based challenge**

**(Chapter 1)**

**Workshop 1 (1 day)**

**Putting it all together**

**(Chapters 4 and 5)**

**Workshop 3 (1 day)**

**Diagram 3.1: WBC workshops and assessment process**

**3.1 INTEGRATED ASSESSMENT**

Da Vinci’s formal assessment process consists of a pre-work assignment (PWA) and a post-modular assignment (PMA). The purpose of the PWA and PMA is described below:

**3.1.1 Pre-work assignment (PWA)**

Taking into account your life experiences, as well as your previous learning experiences, you are required to formalise, in your own words, your understanding of a topic. You are not required to respond to the suggested learning material that will be utilised during the scheduled workshop. Your written response should not exceed 500 words and should be handed to your facilitator at the start of the workshop. If you are unable to attend the workshop, submit the PWA via Moodle, the Da Vinci e-learning platform, on the day of the workshop. Pre-work is an essential component of the experiential learning process and is compulsory

**3.1.2 Post-module assignment (PMA)**

The programme requires integration across functions and very definitely systemically within functions. Theories should be applied cross-functionally in the workplace and the integration of the system as a whole is always important. Processes should be designed to meet specific requirements and it is expected of students to work at a fairly high conceptual level before translating theory into action. Problem solving should be non-linear and the solution processes should be designed to meet changing needs in the workplace. On successful completion of this module, students should be able to demonstrate the application of some of the theoretical constructs within their place.

**3.2 SUBMISSION GUIDELINES**

The electronic version of the pre-work and post-module assignment should be sent to the respective Key Account Manager (KAM) via Moodle, Da Vinci’s e-learning platform by the date stipulated as per your schedule. Assignments that have not been submitted by the due date will be treated as a “non-submission”. Any request for an extension due to exceptional circumstances must be submitted in writing. Such request must be submitted to Da Vinci at least three days prior to the submission date. A maximum of two extensions will be granted during the programme.

For security purposes, please ensure that your name forms part of the footer of your assignment document and that you make a back-up of your document. Students that submit their assignment by the submission date will receive 5% towards their final assignment mark. Please note that you will only be eligible for these marks if you pass the assignment with 50%.

**3.2.1 Workshop 1: I day**

On completion of WBC 100, students would have completed a draft of the first chapter of their work- based challenge. Students should be able to:

* describe the setting (context) of a work-based challenge
* outline the underlying research problem and research question
* define the aim and objectives of the proposed study.

**Post-modular assignment 1 (WBC100)-Draft**

| **Pre-work assignment**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| Taking into account your life experiences as well as your previous learning experiences, you are required to formalise in your own words your understanding of what constitutes a work-based challenge.  | 4 |  |

| **Content Application** | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| Providing a description of your WBC and give a detailed background as context for the challenge you intend to study | 12 |  |
| Provide a description of the types of research, and indicate which one you will be utilising to execute your research | 20 |  |
| Describe the problem statement related to your WBC | 12 |  |
| Discuss the aim and objectives of your research study | 20 |  |
| Indicate the question or set of questions you intend to ask to gather information regarding your WBC | 12 |  |
| **Total** | **80** |  |

| **Presentation of assignment document**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| * Provide an introduction and conclusion
* Develop a logical argument
* Use appropriate language
* Provide a critical perspective
* Attend to layout
* Include references
* A professional academic submission is expected with correctly cited references, a list of references and a table of contents.
 | 10 |  |

| **Response to evaluation**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| It is extremely important for Da Vinci to continuously improve our service to our students and clients regarding programme content, facilitation, facilitators and rendering student support services. We strive to deliver service excellence and therefore request you to please complete the evaluation form, which you will find on the Moodle home page, (http://www.elearning.net.za).Please take note that you are required to complete and return the on-line evaluation form in order to complete the PMA. | 3 |  |

| **Utilisation of information resources**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| * Da Vinci information commons:
* <http://www.vut.ac.za/index.php/electronic-resources/databases>
* <http://www.dbsa.org/>
* <http://africanarguments.org/>
* **Indicate resources**: students are required to indicate the use of references (authors of textbooks, journals and articles from the on-line library) as follows:
* Listing the references in bullet format on the cover page of the assignment
* Including full details of the references in the biography at the end of the assignment following **the Harvard method** of referencing
 | 2 |  |

|  |
| --- |
| **Submission of assignment** |
| Submission of Assignment by stipulated due date. | 5 |  |
| **Total**  | **100** |  |

**3.2.1 Workshop 2: I day**

On completion of WBC 200, students would have completed a draft of chapter two and three of their work- based challenge. Students should be able to:

* identify and critically analyse relevant literature resources to inform the research study
* define the research design which will be utilised to conduct the research study
* define the research methodology which will be utilised to conduct the research study.

**Post-modular assignment 2 (WBC200)-Draft**

| **Content Application** | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| Provide a critical review of relevant literature | 20 |  |
| Describe what research design steps you will be following to conduct your research  | 30 |  |
| Describe which research methodology you will be utilising to conclude your research field work | 30 |  |
| **Total** | **80** |  |

| **Presentation of assignment document**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| * Provide an introduction and conclusion
* Develop a logical argument
* Use appropriate language
* Provide a critical perspective
* Attend to layout
* Include references
* A professional academic submission is expected with correctly cited references, a list of references and a table of contents.
 | 10 |  |

| **Response to evaluation**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| It is extremely important for Da Vinci to continuously improve our service to our students and clients regarding programme content, facilitation, facilitators and rendering student support services. We strive to deliver service excellence and therefore request you to please complete the evaluation form, which you will find on the Moodle home page, (http://www.elearning.net.za).Please take note that you are required to complete and return the on-line evaluation form in order to complete the PMA. | 3 |  |

| **Utilisation of information resources**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| * Da Vinci information commons:
* <http://www.vut.ac.za/index.php/electronic-resources/databases>
* <http://www.dbsa.org/>
* <http://africanarguments.org/>
* **Indicate resources**: students are required to indicate the use of references (authors of textbooks, journals and articles from the on-line library) as follows:
* Listing the references in bullet format on the cover page of the assignment
* Including full details of the references in the biography at the end of the assignment following **the Harvard method** of referencing
 | 2 |  |

|  |
| --- |
| **Submission of assignment** |
| Submission of Assignment by stipulated due date. | 5 |  |
| **Total**  | **100** |  |

**3.2.3 Workshop 3: I day**

On completion of WBC 300, students would have completed a draft of chapter four and five of their work- based challenge. Students should be able to:

* collect and analyse data obtained during their fieldwork
* draw conclusions and make recommendations for further research
* present and defend their study to a panel of experts.

**Note:** In year 3, integrate WBC 100 and WBC 200 chapters into the final research report (WBC 300)

**Post-modular assignment 3 (WBC300)-Draft**

This PMA is the final part of WBC. The activities below conclude chapters four and five. The five chapters need to be collated into a final research report in the required format and submitted for final assessment.

| **Content Application** | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| Based on your research design and methodology collect your data | 20 |  |
| Present the data collected in a structured format for purposes of meaningful data analysis  | 15 |  |
| Write a critical and objective analytical review of the findings  | 20 |  |
| List the key findings from the analysis and make practical recommendations based on the insight gained during the investigation and analysis | 15 |  |
| Draft a presentation to present the key findings, recommendations and a proposed action plan | 10 |  |
| **Sub total** | **80** |  |

| **Presentation of assignment document**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| * Provide an introduction and conclusion
* Develop a logical argument
* Use appropriate language
* Provide a critical perspective
* Attend to layout
* Include references
* A professional academic submission is expected with correctly cited references, a list of references and a table of contents.
 | 10 |  |

| **Response to evaluation**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| It is extremely important for Da Vinci to continuously improve our service to our students and clients regarding programme content, facilitation, facilitators and rendering student support services. We strive to deliver service excellence and therefore request you to please complete the evaluation form, which you will find on the Moodle home page, (http://www.elearning.net.za).Please take note that you are required to complete and return the on-line evaluation form in order to complete the PMA. | 3 |  |

| **Utilisation of information resources**  | **Weighted Mark** | **Value Awarded** |
| --- | --- | --- |
| * Da Vinci information commons:
* <http://www.vut.ac.za/index.php/electronic-resources/databases>
* <http://www.dbsa.org/>
* <http://africanarguments.org/>
* **Indicate resources**: students are required to indicate the use of references (authors of textbooks, journals and articles from the on-line library) as follows:
* Listing the references in bullet format on the cover page of the assignment
* Including full details of the references in the biography at the end of the assignment following **the Harvard method** of referencing
 | 2 |  |

|  |
| --- |
| **Submission of assignment** |
| Submission of Assignment by stipulated due date. | 5 |  |
| **Total**  | **100** |  |

# TOPIC 04: INTRODUCING AND SELECTING A WORK-BASED CHALLENGE

4.1 THE DA VINCI INSTITUTE AS A MODE 2 TERTIARY INSTITUTION

The Da Vinci Institute as a Mode 2 learning organisation acknowledges the need for students to solve a research problem or address an issue around a particular application in the community, industry and society. At Da Vinci this is identified as a work-based challenge (WBC) within the context of each student’s theoretical paradigm.

This mode of knowledge creation is defined by Kraak (2000) as intrinsically trans-disciplinary and trans-institutional, promoting organisational diversity, enhanced social accountability and a more broadly based system of control. Applying Mode 2 problem solving methodologies involves a close interaction of various systems and people during a more reflective process of knowledge creation (Gibbons, Lomoges, Nowothny, Schwartzman, Scott & Trow, 1994; MacLean, MacIntosh and Grant, 2002). Within this context research should have a purpose and positive impact on the community while engaging with communities locally, nationally and internationally (Du Plessis, Sehume & Martin, 2012).

The aim and outcome of learning and research at Da Vinci have the following characteristics:

* + 1. **Application based**

New knowledge is generated within the context of an inconsistency or imbalance or gap realised by the researcher in a certain application, workspace or community. The new knowledge and improved application should be useful to the self, enterprise or community and society.

* + 1. **Trans-disciplinary**

Trans-disciplinarity recognises the complex research realities which call for more than one discipline in terms of interpretation and application; problem formulation occurs between disciplines; it creates an environment in which knowledge flows easily across the various disciplinary boundaries; there is mobility in human resources; research is conducted with openness and flexibility.

* + 1. **Heterogeneity or variety**

Research takes place over a wide range of areas resulting in changes in the design of the research and data collection. Different facets of research may require brief heterogeneous (mixed) teams who may come and go during the action in resolving the challenge. Different skills, knowledge and qualifications are involved. Research methods are viewed and repeated from different angles to find a solution to the issue at hand.

* + 1. **Reflexivity and accountability**

Students and supervisors recognise an awareness of the impact and implications of the research issue within the self, the organisation and the broader community. The need for research on the issue, the goal and the outcome involves social accountability.

* + 1. **Quality control**

Research is guided by a substantial assurance of best practice and usefulness. It should show validity, demonstrate evidence-based application and a contribution towards the self, the industry, community and ecosystem.

* 1. **THE MANAGEMENT OF TECHNOLOGY, INNOVATION, PEOPLE AND SYSTEMS**

Research at The Da Vinci Institute is defined as a process of critical analysis to solve an industry/work-based challenge. This approach embodies the search for and the generation of new knowledge through scholarly work supported by partnerships with business and industry.

As a Mode 2 educational institution, the Institute is focused on the creation of knowledge that is trans-disciplinary in nature, socially relevant and of which the intent is to solve practical problems and to contribute towards the professional development of the people involved. It is in this context that the Institute facilitates a journey of self-discovery for prospective business leaders and entrepreneurs. A Mode 2 institution such as, Da Vinci is characterised by knowledge production in the context of professional applications, trans-disciplinary engagements, heterogeneity and organisational diversity, enhanced social accountability and a broad-based system of quality control.

The Da Vinci Institute has positioned itself as an institution of higher learning, specialising in the Management of Technology, Innovation, People and Systems (TIPS). The core objectives informing the research agenda at Da Vinci include:

• upholding the TIPS framework and the facilitation of TIPS related research initiatives

• conducting applied research as informed by industry and business

• establishing associations with business, industry and government

• creating knowledge in the context of a Mode 2 Knowledge Generation

• facilitating scholarly engagements for students and facilitators alike

• research projects leading to TIPS qualifications.

## ONTOLOGICAL AND EPISTEMOLOGICAL CONSIDERATIONS

## The following reading is relevant to this unit.

 Saunders M., Lewis P., Thornhill A. & Bristow A. 2016. *Understanding research philosophy and approaches to theory development* in Saunders M., Lewis P., & Thornhill A. Research Methods for Business Students*.* 7th edition. Harlow: Pearson. pp. 122-161.

|  |  |
| --- | --- |
|  | A **consideration** can also be called a paradigm, a philosophy, a perspective, or position.It is a universally acknowledged, proven and commonlyused philosophy of research of a phenomenon and can also be called an ontological, epistemological or axiological assumption. |

According to Burrell and Morgan (1979) the study of *social phenomena* is shaped by two sets of philosophical assumptions, namely, *ontological* and *epistemological. Ontology* refers to assumptions on how one sees the world from your own reality, while *epistemology* refers to assumptions about the best way to study the world, for example, should one use an objective or subjective approach to study reality? (Burrell & Morgan, 1979). These theories, or paradigms, or assumptions will be discussed in more detail under the following subheadings:

### Ontology

*Ontology* refers to assumptions about the reality. Although this many seem abstract and far removed from your intended research project, your ontological assumptions shape the way in which you see and study your research objects. In business and management these objects include organisations, management, individuals’ working lives and organisational events and artefacts. Your ontology therefore determines how you see the world of business and management and, therefore, your choice of what to study for your research project.

 Imagine, for example, you wanted to research resistance to organisational change. For a long time, business and management scholars made the ontological assumption that resistance to change was highly damaging to organisations. They argued it was a kind of organisational misbehaviour, and happened when change programmes went wrong. Consequently they focused their research on how this phenomenon could be eliminated, looking for types of employee that were most likely to resist change and the management actions that could prevent or stop resistance. More recently, some researchers have started to view the concept or resistance as a phenomenon that happens all the time whenever organisational change takes place, and this ‘new’ knowledge benefit organisations by addressing problematic aspects of change programmes. Their different ontological assumptions mean that they focus on how resistance to change can best be harnessed to benefit an organisation, rather than looking for ways to eliminate resistance (Thomas & Hardy 2011).

### Epistemology

*Epistemology* concerns assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how we can communicate knowledge to others (Burrell & Morgan 1979). Whereas ontology may initially seem rather abstract, the relevance of epistemology is more obvious. The multidisciplinary context of business and management means that different types of knowledge – ranging from numerical data to textual and visual data, from facts of interpretations, and including narratives, stories and even fictional accounts – can all be considered to be legitimate. Consequently different business and management researchers adopt different epistemologies in their research, including projects based on archival research and autobiographical accounts (Marti and Fernandez 2013), narratives (Gabriel *et al.* 2013) and fictional literature (De Cock and Land 2006).

This variety of acceptance of different epistemologies gives you a much greater choice of methods that you would have in many other academic disciples. However, it is important to understand the implications of different epistemological assumptions in relation to your choice of method(s) and the strengths and limitations of subsequent research findings. For example, the (positivist) assumption that objective facts offer the best scientific evidence is likely to result in the choice of quantitative research methods. Within this approach, the subsequent research findings are likely to be considered objective and generalizable. However, they will also be less likely to offer a rich and complex view of organisational realities, account for the differences in individual contexts and experiences or, perhaps, propose a radically new understanding of the world, than if you based your research on a different view of knowledge. In other words, despite this diversity, it is your own epistemological assumptions that will govern what you consider legitimate for your research.

## THE NATURE OF RESEARCH

The basic objective of any research project is the acquisition of knowledge that can be used as a basis for decision-making to best meet identified aims and objectives. The acquisition of this knowledge is usually best achieved through the design and implementation of a research project, plan, case or challenge which, more often than not, may be implemented within the context of frame of Technology, Innovation, People and Systems.

It is accepted that a prime objective of an academic research project is to venture into the universe of unknown knowledge. Consequently, you may be unsure about the type of information to search for, how to search for this information and what directions you have to follow to acquire the necessary knowledge for further research in order to identify the basic activities, which usually constitute a research project. In general terms these phases could include:

* identifying the required area of research, information and knowledge
* finding the resources required for the project, including existing knowledge, equipment, personnel, finance, information technology facilities and buildings
* managing your time carefully
* outlining and planning your project
* maintaining the momentum of the research project and
* adhering to personal, professional and academic deadlines and expectations.

With the acquisition of part of the required knowledge, it may be necessary to redefine the objectives and research project.

## Research defined

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| C:\Users\Design\OneDrive\Icons\Folders & OS\Configure alt 2.png | Punch (2005) defined research as “an organised, systematic and logical process of inquiry, using empirical information to answer questions (or test hypotheses/formulised idea)”. Research can also be defined as ‘the systematic investigation into, and study of materials and sources in order to establish facts and reach new conclusions’ (Oxford online dictionary, 2013). |

It is carefully and systematically conducted to address an issue, resolve a problem or develop a discourse in order to understand the universe; and through this process, establish facts and contribute to new knowledge (Lindlof & Taylor, 2002). It often involves discovering new knowledge and integrating it with experience and current knowledge to discover new patterns leading to innovative relationships. The entire process is linked to the development of a framework which could contribute to the building of a new theory in the field of research or facet of reality. The researcher’s own framework is structured according to his/her reality, is logical and is a search for knowledge, while applying careful attention to the details of methodology so that other researchers can reproduce the process.

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| C:\Users\Design\OneDrive\Icons\Folders & OS\Configure alt 2.png | **Activity**Ask yourself: What do I want to research and why? If so, how and why is this important? |

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## Examples of research

The range of possible research projects is wide, as it is possible to acquire new knowledge and information in almost any field imaginable. Typical research projects could include the following types of studies:

* increasing your understanding of physical concepts such as Newton’s laws of motion, or Einstein’s theories of Relativity
* quantifying the internal losses of a transmission line
* characterising the efficiency of a power plant and all its individual components
* evaluating managerial procedures and their effectiveness on project management
* quantifying the opinions of personnel regarding the effectiveness of outsourcing procedures
* testing new products in the market
* it could also comprise research on a technical aspects of a host organisation’s business, including development and operations, including
* financial aspects, including capital equipment and operating costs
* intellectual capital requirements, including existing and alternative workplace competencies
* environmental effects of building and operating a plant
* the use of technology (process plant, computers and electronic communication) to increase the efficiency and effectiveness of operations, including customer services and
* the use of managerial and leadership techniques to achieve operational efficiencies and objectives.

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| C:\Users\Design\OneDrive\Icons\Folders & OS\Configure alt 2.png | **Activity**Think about the field within which you can place your research, e.g. management research. |

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Once you have concluded your study, a research report will include:

* an ordered, critical and well-structured exposition of knowledge in an approved field, relevant to the intended degree
* affording evidence of knowledge of relevant literature

## Types of research

Saunders, Lewis and Thornhill (2009) divide types of research according to the purpose for which the research is conducted. Research activities are usually grouped into three types, namely: exploratory research, descriptive research and explanatory research. The different types of research are outlined in Table 4.1 and 4.2.

| **Type of research** | **Description** |
| --- | --- |
| **Exploratory research** | Exploratory research is often conducted in new areas of inquiry in which the aim of the research is to scope out the magnitude or extent of a particular phenomenon, problem or behaviour. |
| **Descriptive research** | Descriptive research examines the what, where, and when of a phenomenon. It is directed at making careful observations and gives detailed documentation on a phenomenon of interest. These observations are based on the scientific method which means the research must be applicable and precise; which leads to the conclusion that it should be more reliable than causal observations (Bhattacherjee, 2012). |
| **Explanatory/Causal research** | Explanatory research seeks explanations of observed phenomena, problems or behaviours and seeks answers to questions as to the why and how. It attempts to ‘connect the dots’ by establishing ‘causal relationships between variables’ and identifying causal factors and outcomes of the target phenomena. |

**Table 4.1: Types of research I** (Saunders, Lewis & Thornhill, 2009)

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| --- | --- | --- | --- |
|  | **Exploratory Research** | **Descriptive research** | **Causal research** |
| **Amount of uncertainty** | Highly ambiguous | Partially defined | Clearly defined |
| **Key research statements** | Research question | Research questions | Research hypothesis |
| **When conducted** | Early stage of decision making | Later stage of decision making | Later stages of decision making |
| **Usual research approach** | Unstructured | Structured | Highly Structured |
| **Nature of results** | Discovery oriented, productive but still speculative. Often inneed of further research | Can be confirmatory although more research is sometimes still needed. Results can be actionable | Confirmatory oriented. Fairly conclusive with actionable results often obtained |

## Table 4.2: Types of research II (Zikmund, Babin, Carr & Griffin, 2010)

##

## SELECTING A WORK-BASED CHALLENGE

Deciding on your appropriate work-based challenge cannot be over-emphasised. If the topic has substance and appeal, the work needed to complete the research will seem that much easier and exciting, and the outcome will be that much more relevant.

Consider the questions listed in Table 4.3 when selecting a work-based challenge

| **Criteria** | **Related questions** |
| --- | --- |
| Interest: | How **interested** are you (individual/the group) in the WBC? |
| Originality: | How **original** is it? |
| Relevance: | How **relevant** is it to the company's ability to operate more effectively? |
| Contribution: | How much of a **contribution** could it make to the company's success? |
| Solutions: | How much of the programme material can be utilised to generate recommendations and **solutions**? |
| Practicality | How **practical** is the WBC in relation to your resource constraints? (time, money) |
| Alignment: | How **aligned** is the WBC to the company's strategic and operational objectives? |
| Holism | How **holistic** is the approach that will need to be adopted to answer the research question related to the WBC challenge? |
| Customer Benefit: | How could the identified internal/external **customer** benefit from solving problems related to WBC? |
| Involvement: | How could other people constructively be **involved** in researching and addressing the WBC?  |
| Personal Benefit: | How could you **personally benefit** from the learning experience and from the WBC may represent?  |
| Contribution | How much of a **contribution** could the WBC make to the company's success? |

**Table 4.3: Criteria for selecting a WBC**

## OPPORTUNITIES RELATED TO A WORK-BASED CHALLENGE

The selected work-based challenge should provide an opportunity for you to:

* explore a current and/or future issue of potential value to the organisation or yourself
* optimise team and resource utilisation
* involve subordinates and colleagues internally, and specialists externally
* apply knowledge and techniques from the programme
* reveal holistic thinking in an integrated analysis covering all management areas
* search for the best practices and solutions
* compile a professional research report for assessment.
	1. **RESEARCH AND THE WORK-BASED CHALLENGE**

The research answers (or findings) are based on observations, data collection, data analysis and interpretation. This may seem to be a very simple explanation of the objective of research, but it is important to understand that a research question (or questions), sit at the centre of any study, small or large.

Once you have identified a research question, the tools to answer your question are found in the research design and research methods.

Research generally follows four steps (Punch, 2005):

* Framing the research in terms of research questions
* Determining what data are necessary to answer those questions
* Designing research to collect and analyse data
* Using the data to answer questions.
	+ 1. **The link between a research question and a work-based challenge**

Management is often confronted with questions everyday: they are puzzled by what happens in the workplace and therefore ask ‘why’, ‘how’ and ‘what’ questions.

For instance, you could ask, *‘why are my employees not performing in this area?’; ‘how can we improve productivity?’* and *‘what are the best ways to improve turnover and reduce absenteeism?’*

Research questions do not have to be big or complex. As a management-researcher, research questions are posed about what you observe in your meetings or interactions with your employees and hopefully, the answer will help you make sense of the problems you are experiencing or the things that you may notice which puzzles you. Let us look at how you could identify and formulate a research question.

* + 1. **Finding a research question**

Your research question should ‘come from real-life observations and dilemmas’ (Hubbard & Power, 2003). Below are a few examples:

* What happens when my employees try to solve problems without my help?
* What activities will foster teamwork among my employees?
* Why are some of my employees reluctant to solve problems on their own?

These questions arise out of workplace concerns by the managers because they are important for your own management style and the employees’ learning. When management write their research findings down, what they have learnt through the research can be shared with other managers, thereby enhancing their own and others’ management practices.

* + 1. **Framing the question**

Workplace concerns translate into research topics and questions. Your area of speciality will influence a research topic. For instance, a Business Strategic Manager will therefore be interested in a business strategic research question, for example, not an accounting question.

There may be many questions emerging from your interaction with your employees and colleagues. The first step is to identify and narrow down your areas of interest into a researchable area. New researchers often try to address too many aspects at once.

While hypotheses are often associated with experimental research (also called quantitative research), in social research (qualitative research) a formalised idea will assist the researcher to formulate a question. Remember that your research answers (also called findings) may not be what you expect. The purpose of a hypothesis or a formalised idea is to give you something to either prove or disprove. It guides and expresses an informed guess or hunch (Punch, 2005).

* + 1. **The criteria for a good research question**

If your research question is poorly formulated, your study is going to be unfocused, and the findings may not be valid. Your question need to be reformulated if you can easily answer ‘yes’ or ‘no’. Your question should allow for continual discovery, even for discovery that is not necessarily expected. Your question should therefore lead to answers in the form of descriptions or observations.

Once you have a clear question, you can consider some sub-questions. Ask no more than five to seven sub-questions, always checking that each sub-question unpacks your central research question (Cresswell, 2014). Sub-questions also further narrow the focus of the proposed research, because sub-questions are generally more specific and detailed (Punch, 2005). When, at the end of your study, you have answered the sub-questions, you will be able to answer your central research question.

Your sub-questions also point to the data you need to collect to answer the question/s, and to the research methods that would be most useful for your study. When we have found out what data we have to collect, and from whom, then we can decide on the best method to collect the data. As you can see from above, it is not possible to separate a research question from the tools that you will use to collect information, or from the people you will be approaching for responses to your question(s). Your research question will therefore be aligned to your research design and methods.

* 1. **ETHICS IN RESEARCH**

The following documents are relevant to this unit.

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| --- | --- |
| C:\Users\Design\OneDrive\Icons\Applications\Koding.png | **Reading:**Research ethics policy and ethical clearance application form. |

Any research involves people, and as management-researcher you need to be especially sensitive to research with employees as research subjects – even if the research is intended to benefit the employees or improve workplace practice. The law protects humans’ right to privacy, and their right to refuse to participate in any research study. An employee may never be forced or convinced (coerced) into participating in a study. For this reason, most universities and other research institutions require that the researcher seeks permission to conduct research. However, it depends on how formal your research is going to be, and who you intend to share your research findings with. If you intend to use your data to diagnose problems in the workplace, for example, and intend to share your findings only with your colleagues, then formal permission may not be necessary (however, your employer may have a policy on the matter, in which case you need to follow those rules).

However, if you intend to publish your research findings, especially as part of your own further studies, then you will most definitely need permission.

The most direct ethical concern of the social sciences research is the possibility that his/her research will cause harm to the research participants. Fortunately, the danger of physical harm from participation in social science research is very low. Nevertheless, given researchers interest in studying people’s emotions, participation in social research may in some cases produce rather extreme emotional reactions, and these may have long-term negative outcomes. Some past research has exposed severe threats to the psychological welfare of the participants. One example is the well-known research of Bramel (1962), where male college students were told, on the basis of false data, that they had “homosexual tendencies.” Although it was later revealed to them that this feedback was not true, the participants may have experienced psychological stress during the course of the research process and after it was over.

Furthermore, your own personal bias may interfere. Marshall and Rossman (1999) indicate clearly that it is important to manage one’s personal values or one’s subjectivity during the research engagement. Not surprisingly, this aspect has been receiving increasing attention among social science researchers.

* 1. **REFERENCING**

In academic writing you have to reference all the sources of information used because:

* It strengthens your argument
* It demonstrates that you have conducted sufficient research
* It gives credit to the authors and sources you consulted
* It enables the reader to find the original sources
* It allows the reader to verify your data
* It prevents plagiarism, a form of academic theft.

You need to reference your source when you:

* quote someone else's exact words
* use a diagram, photo, table or structure from another source
* paraphrase ideas in your own words
* offer a summary of someone else’s material.

Remember to place direct quotes in quotation marks and block longer quotations (more than 40 words), e.g. indent the text, to make them stand out. Use quotations sparingly (see below).

* + 1. **The Harvard Method**

Harvard is known as the “author and date” system.

Sources are referenced in two places in your assignment:

* at the end of your assignment (the list of references)
* in the text (in-text referencing).

With in-text referencing you provide a brief summary of the source used, at the relevant point in the body of your writing, i.e. the name of the author, year of publication and page number. Full details are provided in the list of references at the end of your assignment.

# Topic 05: Practical Guidelines for Conducting Research on a Work-based Challenge

#

* 1. **Literature review**

The literature review will follow the discussion on the philosophical/theoretical/conceptual framework. For any research question to have a meaning something must be known about it. The selection of the optimal paradigm for solving a problem cannot be done unless the researcher is familiar with the literature related to his/her research problem. To achieve these objectives the literature must be studied. A study of the literature is of course essential for the post-modular two (PMA2) (to show that the study is sound) and for the final research report. The purpose of reviewing the literature derives from the fundamental principle that the more a researcher knows about the peripheral investigations relating to his/her area of research, the more knowledgeably can s/he approach the problems inherent in his own area.

The purpose of the literature review is:

* to locate investigations similar to your own
* to find how other researchers handled situations similar to your own
* to suggest a method or technique that may be appropriate
* to reveal sources of data that you may not know exist
* to introduce you to significant research personalities in the area
* to see your own study in historical and theoretical perspectives
* to relate your study to earlier and more primitive studies
* to provide you with new ideas and approaches
* to assist you in evaluating your own research relative to others.

As you search for a real work-based challenge, it is important that you conduct a brief literature review in order to determine if the area of interest has not been over researched. Research for this necessary step is to ensure, you will not focus on an area which extensive research has already been done and your work, therefore in the same area will be redundant. In other words, students who think that he/she has a real work-based challenge which would give him a monopoly in an unstudied virgin, finds, on commencing the literature review, that the area has already been well studied.

Reading material without developing a critical frame of mind is in itself useless. Critical thinking skills are essential if researchers are to evaluate intelligently what they read. Expertise in the subject of your research topic is insufficient for evaluating the scholarly literature surrounding your research topic. You therefore use a literature review to generate a picture of what is known or not known about the phenomenon or research topic. It should be comprehensive and should cover all relevant research and supporting documents, including textbooks, journals, periodicals and computer-generated searches.

* 1. RESEARCH DESIGN

Babbie (2011) describes a research design as a logical arrangement, or a master plan specifying the methods and procedures for collecting data and analysing the needed information (Zikmund, Babin & Ying, 2010). It spells out the type of research, sampling methods, sources of data, procedures for data collection, measurement issues, and data analysis plans (Babbie, 2011). A good research design is important so as to produce a quality research report (McDaniel & Gates 2007; Zikmund *et al.,* 2010).

Scientific research design has seven steps (Zikmund *et al.,* 2010; Ezzy, 2006). Research activity starts with the review of relevant existing knowledge of a phenomenon under investigation, then the formulation of concepts and propositions, statements of hypotheses (or assumption), the design of research to test the hypotheses (assumptions), the acquisition of meaningful data; analysis and evaluation of the data; and, finally the proposal of an explanation of the phenomenon and a statement of any new problems raised by the research. Table 5.1 outlines the seven scientific research design steps anticipated for a research study and the concurrent activities that need to take place.

|  |  |
| --- | --- |
| **Steps** | **Activity** |
| 1 | Assessment of relevant existing knowledge of the phenomenon |
| 2 | Formulation of concepts and proposition/research question |
| 3 | Idea or hypothesis or assumption |
| 4 | Design research method to test the idea or hypotheses or assumption  |
| 5 | Acquisition of meaningful data |
| 6 | Analysis and evaluation of data |
| 7 | Proposal of an explanation of the phenomenon and a statement of new problems raised by the research |

**Table 5.1: Seven scientific research design steps** (Ezzy, 2006 and Zikmund *et al.,* 2010)

When undertaking research, the research design is dictated by the type of research being undertaken as well as the purpose of the study (Neuman, 2007; Sekaran & Bougie, 2010).

A *research design* can therefore also be described as a ‘plan or blueprint’ of how you intend to conduct the research’ (Mouton, 2001:55). Saunders, Lewis and Thornhill (2009) concur that the research design is the ‘general plan of how you will go about answering your research question(s), namely:

* why is my research necessary?
* what strategy should suit my study specifically?
	+ 1. **Quantitative Research Designs**

In quantitative research, there could be a number of research designs. These may include:

* + - 1. **The true experimental design**

The key feature of the true experimental design is that a random selection is made of people (respondents/participants) who will be involved in the study. The researcher, for example, takes a list of names and picks names at random. This is because the total population is often too large to include all of them in the study, so a sample is selected (more about sampling later).

Once the participants have been selected, the group is divided into two. One group is the experimental group, and the other group is the control group. This is typical of scientific research – quantitative research tries to mirror the scientific approach used for natural sciences.

The experimental group is the group which will be exposed to the experiment (intervention), while the control group is left untouched. A comparison will be made between the two groups to see whether the experiment has had any impact. The main purpose of the form of research is to determine ‘cause and effect’ of the intervention (experiment). This design is often used for large-scale studies, sometimes involving thousands of participants (also called respondents).

* + - 1. **The quasi-experimental design**

In the quasi-experimental research design, no random selection of participants is done, but the purpose – studying ‘cause and effect’ is the same. ‘Quasi’, in this context means ‘false’, which means that it is not a true experimental design. This design is used when it is not possible to remove participants from their classes, for example where learners cannot stay for afternoon classes. The experimental and the control groups are therefore pre-determined. The experiment will then be conducted during normal teaching hours.

* + - 1. **The single subject design**

In many cases, it is impossible, or even undesirable, to study a group of participants (here participants are called ‘research subjects’ – the ‘subject’ of the study). This may be the case when the management-researcher is interested in a single employee, or a small group of employees, for example employees in a certain department. In such a situation it does not make sense to do a random selection of all departments. However, the purpose of the study remains the same, namely to determine ‘cause and effect’.

* + - 1. **The descriptive design**

Descriptive research designs try to understand a current issue (an existing phenomenon). It does not try to compare anything, and it does not use an experiment as an intervention, but it does use numbers to express the characteristics of the phenomenon.

* + - 1. **The comparative design**

With comparative research design, the management-researcher takes the descriptive design one step further by comparing two or more groups’ responses to a particular phenomenon. No intervention (experiment) is applied. However, this kind of study often leads to the development of an intervention – what we find may lead to a change in how we do things in future.

* + - 1. **The correlational design**

This research design tries to determine relationships (correlations) between issues (phenomena). It is also a comparative research design, but now looks at how variables may influence the phenomena. When there is a relationship between the variables, it is referred to as having a correlation between the variables. A positive correlation means that there is a high level of agreement between variables, and a negative correlation means that there is a low level of agreement. Correlational designs use statistical data to explain the extent to which the variables may have an effect on each other.

* + - 1. **The survey design**

Surveys are most often used for large-scale studies. In this design, the researcher selects a representative sample for the total population. It usually involves a large number of participants. A representative sample means that every possible type of participant is represented in the study group. The participants complete survey questionnaires or structured interviews (or both), resulting in quantitative findings (numbers).

* + - 1. **The *ex post facto* design**

This research design focuses on what has already happened, and not on what will happen when an experiment (intervention) is introduced. In other words, the researcher looks at the possible causes for something that has already taken place. This design is useful when looking at two similar samples where one (or more) variables may have an effect on the phenomena being studied.

* + 1. **Qualitative Research Designs**

In qualitative research designs there are two main types of design: an interactive mode and a non-interactive mode of enquiry

|  |
| --- |
| **Inductive logic**  |
| **Qualitative research designs** |
| Mode of enquiry | **Interactive** | **Non-interactive** |
| Research design | Ethnographic | Concept analysis |
| Phenomenological | Historical analysis |
| Case study |  |
| Grounded theory |  |

**Table 5.2:** Modes of enquiry

* + - 1. **The ethnographic mode of enquiry**

Ethnographic research usually refers to the cultural traditions of a particular group of people. When we study the behaviours, habits and practices of this group, it is known as ethnography. This research design can also be applied to other groups who consider themselves as part of a community, for example, nurses, lecturers or other work communities. This research design requires field-work over a long period of time. During this time, detailed notes are made on the beliefs, rituals and traditions of the group involved.

In social research, the researcher most often study only one unit (like a family, or a workplace/organisation) of a larger cultural group or social system – this is then called micro-ethnography. If this approach is narrowed down to an even smaller unit, focussing only on one activity (for example sport as part of the school curriculum), then it is known as ethnomethodology.

* + - 1. **The phenomenological mode of enquiry**

This research design attempts to describe the meaning of a ‘lived’ experience of a person in order to understand more fully what has occurred. The researcher commonly uses interviews to determine the person’s perspective and the ways in which he/she makes sense of the situation. This type of research is undertaken to understand things as they are perceived by the respondents (participants).

* + - 1. **The case study mode of enquiry**

In the case study research design, the management-researcher investigates a specific programme, event, activity, or a contained group. It is called a study of a ‘bounded’ system. In other words, there are clearly defined boundaries in terms of time, place and activity. It is usually a subject for study because the programme, event, activity or group is unique. This involves a detailed analysis of every aspect of the programme, event, activity or group. The purpose of the case study is to gain an in-depth understanding of the issue.

* + - 1. **The grounded theory mode of enquiry**

This design is an advanced research design, focused on the development of new theories, hypotheses or concepts. The design starts with a very general research question and then collects extensive data from many different people with many different perspectives. The key activity of grounded theory research is to analyse and compare data until a central issue emerges. This central issue becomes the focus for the new theory, hypothesis or concept, which are often the basis for further testing.

The non-interactive qualitative research designs include two types: concept analysis and historical analysis. Non-interactive modes of enquiry are also known as analytical research. This form of research often involves the study of formal documents, research papers and other narratives. The data or ‘facts’ are studied, analysed and synthesized to understand a past event or concept that does not have much meaning on its own. The purpose of this type of study is to lift out hidden and underlying meanings which may have an influence on what is currently going on. Policy research is often done in this manner.

* + - 1. **The concept analysis mode of enquiry**

Concept analysis studies management concepts to determine the meanings and understanding of these concepts. This is often done to achieve a common understanding by management in order to assist with implementation. Examples of concepts that may be analysed are: ‘self-realisation’, or ‘cooperative’.

* + - 1. **The historical analysis mode of enquiry**

The history of management; management and policies are studied through a systematic critique of historical documents. This kind of study is often undertaken to understand what has led to current practices. Examples of historical analytical studies undertaken include policies on ‘customer service’ and ‘group work’.

* 1. **RESEARCH METHODOLOGY**

The following readings are relevant to this unit.

|  |  |
| --- | --- |
| C:\Users\Design\OneDrive\Icons\Applications\Koding.png | **Reading:**Mixing methods: The entry of qualitative and quantitative approaches into the research process.**Reading:**From words to numbers: How to transform qualitative data into meaningful quantitative results. |

The two main research methods in social research are quantitative and qualitative methods. You have already been introduced to these two terms in the previous section. It is not possible to separate research logics from research methods. Likewise, it is not possible to separate research methods from data collection techniques. You already know that quantitative research method use numbers to express research findings, while qualitative research approaches use words to describe the findings.

The choice of research *methodology* (processes employed to collect information) is directly informed by the rationale of the study. It details how the researcher accesses and reports on what was learned about reality.

* + 1. **Quantitative methods**

According to Babbie (2013) quantitative methods involve complex experiments with many variables and treatments (e.g. factorial designs and repeated measure designs). They also included elaborate structural equation models that incorporate causal paths and the identification of the collective strength of multiple variables. These methods include true experiments and less rigorous experiments called quasi-experiments and correlational studies (Campbell & Stanley, 1963), and specific, single-subject experiments (Cooper, Heron & Heward, 2007).

As implied by its name, quantitative research is conducted by acquiring relevant data, quantified, using numerical values. The approach is essentially objective, with arguments based solely on the use of suitable analytical methods to analyse the data and draw objective conclusions. Personal opinions are largely ignored, except in instances where conclusions are drawn based on the personal opinions of those involved. Three principles are implemented within the true form of the experimental design, for example manipulation, randomisation and control.

|  |  |
| --- | --- |
| **#** | **Description** |
| 1. | **Examples of quantitative research:*** The level of contaminants in mineral water supplies
* The level of contaminants in lubricating oils
* The efficiencies of a range of motor car engines
* Thedelivery times for postal services
 |
| 2. | **Quantitative methods:** * Quasi-experiments
* Correlational studies
* Specific single-subject experiments
 |
| 3. | **Quantitative data analysis:**Analysing numerical data implies the use of statistical methods, namely averages, gradients, standard deviations and confidence limits. Because of the mathematical nature of analysing numerical data quantitative methods may seem difficult to handle. In effect, since it is a relatively simple matter to use standard analytical methods on spreadsheets, it is ultimately quite easy to analyse numerical data using, for example, readily available functions in spreadsheets. |

* + 1. **Qualitative methods**

In qualitative research methods, the numbers and types of approaches also became more clearly visible during the 1990s. Books have summarised the various types of methods (such as the 19 methods identified by Wolcott (2001) and complete procedures are now available on specific qualitative methods. For example, Clandinin and Connelly (2000) have constructed a picture of what "narrative researchers do," Moustakas (1994) discussed the philosophical tenets and the procedures of the phenomenological method, and Strauss and Corbin (1990; 1998) have explicated the procedures of grounded theory. Wolcott (1999) has summarised ethnographic procedures and Stake (1995) has identified the processes of case study research.

The qualitative approach to research involves the use of a greater degree of subjectivity, personal opinions and perceptions. This approach is often used when it is necessary to examine and perhaps understand human behaviour, mostly in work situations, but not restricted to work situations

| **#** | **Description** |
| --- | --- |
| 1. | **Examples of qualitative research:*** Market preference for particular restaurants
* Reasons for staff turnover in selected departments
* Preferences for the colour of motor cars
* Preferences for a range of holiday destinations
* New names for streets and cities.

Within the qualitative research design, the researcher wishes to explore and describe the meaning and promote the understanding of the human’s lived experiences (Brink, 2007:113). |
| 2. | **Qualitative methods:**The following methods are of interest;* **Ethnographies**, in which the researcher studies an intact cultural group within a natural setting over a prolonged period of time by collecting, primarily, observational data (Creswell, 1998). The research process is flexible and typically evolves contextually in response to the lived realities encountered in the field setting (LeCompte & Schensul, 1999).
* **Grounded theory**, in which the researcher attempts to derive a general, abstract theory of a process of action, or interaction grounded in the views of participants in a study. This process involves using multiple stages of data collection and the refinement and inter-relationship of categories of information (Strauss & Corbin, 1990 and 1998). Two primary characteristics of this design are the constant comparison of data with emerging categories and theoretical sampling of different groups to maximise the similarities and the differences of information.
* **Case studies**, in which the researcher explores in depth a program(me), an event, an activity, a process, or one or more individuals. The case(s) are bound by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time (Stake, 1995).
* **Phenomenological research**, in which the researcher identifies the "essence" of human experiences concerning a phenomenon, as described by participants in a study. Understanding the "lived experiences" marks phenomenology as a philosophy, as well as a method, and the procedure involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning (Moustakas, 1994). In this process, the researcher "brackets" his or her own experiences in order to understand those of the participants in the study (Nieswiadomy, 1993).
* **Narrative research** is a form of inquiry in which the researcher studies the lives of individuals and asks one or more individuals to provide stories about their lives. This information is then retold or re-storied by the researcher into a narrative chronology. In the end, the narrative combines views from the participant's life with those of the researcher's life in a collaborative narrative (Clandinin & Connelly, 2000).
 |
|  | **Qualitative data analysis or interpretation*** Hermeneutics
* Dialectic reasoning
* Narrative metaphor – human beings construct stories to deal with experiences.
* Triangulation of both qualitative and quantitative data
 |

* + 1. **Mixed method research**

Using mixed methods involves collecting and analysing both qualitative and quantitative data in a single study. The concept of mixing different methods probably originated in 1959, when Campbell and Fiske used multiple methods to study validity of psychological traits. They encouraged others to employ their "multi-method matrix" to examine multiple approaches to data collection in a study. This prompted others to mix methods, and soon approaches associated with field methods, such as observations and interviews (qualitative data), were combined with traditional surveys (quantitative data) (Sieber, 1973).

Recognising that all methods have limitations, researchers felt that biases inherent in any single method could neutralise or cancel the biases of other methods. Triangulating data sources - a means for seeking convergence across qualitative and quantitative methods - were born (Jick, 1979). From the original concept of triangulation emerged additional reasons for mixing different types of data. For example, the results from one method can help develop or inform the other method (Greene, Caracelli & Graham, 1989). Alternatively, one method can be nested within another method to provide insight into different levels or units of analysis (Tashakkori & Teddlie, 1998). Or the methods can serve a larger, transformative purpose to change and advocate for marginalised groups, such as women, ethnic and racial minorities, members of gay and lesbian communities, people with disabilities, and those who are poor (Mertens, 2003).

The reasons for mixing methods, have led writers from around the world to develop procedures for mixed methods of inquiry and to take the numerous terms found in literature, such as multi-method, convergence, integrated, and combined (Creswell, 1994), and shape procedures for research (Tashakkori & Teddlie, 2003). The mixing of both qualitative and quantitative at particular stages is indicated by Nastasi, Hitchcock, and Brown (2010) as a partially integrated mixed methods research study.

| **#** | **Description** |
| --- | --- |
| 1. | **Examples of mixed method research*** **Sequential procedures**, in which the researcher seeks to elaborate on or expand the findings of one method with another method.
1. This may involve beginning with a qualitative method for exploratory purposes and following up with a quantitative method with a large sample so that the researcher can generalise results to a population.
2. Alternatively, the study may begin with a quantitative method in which theories or concepts are tested, to be followed by a qualitative method involving detailed exploration with a few cases or individuals.
* **Concurrent procedures**, in which the researcher converges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. In this design, the investigator collects both forms of data at the same time during the study and then integrates the information during the interpretation of the overall results. Nesting one form of data within another, larger data collection procedure in order to analyse different questions or levels of units in an organisation.
* **Transformative procedures**, in which the researcher uses a theoretical lens as an overarching perspective within a design that contains both quantitative and qualitative data. This lens provides a framework for topics of interest, methods for collecting data, and outcomes or changes anticipated by the study. Within this lens could be a data collection method that involves a sequential or a concurrent approach.
 |
| 2. | **Mixed method methods:**The combination of field methods such as observations and interviews (qualitative data), with traditional surveys (quantitative data) serves as an example of some mixed method methods (Sieber, 1973). |
| 3. | **Mixed method analysis*****Triangulation*** comprises using two or more research approaches, methods, or techniques, in the same research project. The purpose would be to increase the certainty of experimental results by essentially homing in on research results from two different angles, or research methods. Collis and Hussey (2003) state that with the use of triangulation "we can get a fuller and richer picture" of data.According to Denzin (1970:297), triangulation is "the combination of methodologies in the study of the same phenomenon". If similar results are obtained using different research methods, it reduces the likelihood that the results could depend on the method used to obtain the data, and in greater reliability and validity of the results.* For example, if the power consumed by a community is determined by measuring the power transmitted in the transmission lines to the community and by measuring the power used by each consumer, and the total power obtained using both methods is similar, the confidence that the measured power represents the true power consumed would be increased.
* The potential to use different, independent methods to obtain experimental data, would, of course, depend on the nature of the research. The fine detail of the chemistry of the soil on the surface of Mars could be measured using a single available Mars probe. The salary bill of consumers could, because of their proximity and the nature of the problem, be measured by summing all the salary bills, or by measuring the total expenditure and increase in savings of the target population.

Easterby-Smith, Thorpe and Lowe (1991) define four **types of triangulation:*** ***Data triangulation*:** data is collected at different times and/or sources, and combined or compared, to increase the confidence of the recorded results.
* ***Investigator triangulation*:** data is independently recorded by different investigators, and compared and/or combined to increase confidence in the results obtained.
* ***Methodological triangulation*:** basically, where both quantitative and qualitative methods are used. An example could involve determining the popularity of a particular cold drink. The popularity may be determined qualitatively by means of a questionnaire, where people are simply asked to list their preferences in cold drinks. The results could also be determined using a quantitative method, by collecting data on sales of the cold drink and comparing the sales figures with the sales of competitive cold drinks.
* ***Triangulation of theories*:** the use of two different theories to explain the same problem.
 |

# TOPIC 06: PUTTING IT ALL TOGETHER

* 1. **SAMPLING**

The following reading is relevant to this unit

|  |  |
| --- | --- |
| C:\Users\Design\OneDrive\Icons\Applications\Koding.png | **Reading:** (available in the library)Research Design and Data Collection methodsColdwell, D and Herbst, F. 2004. *Business Research*. Juta and Co Ltd, 2004 |

***Sampling*** is an important part of your research design and should be part of your proposal. The question that you want to answer with your sampling is ‘from whom will the data be collected?’, or ‘who and what will be studied?’ (Punch, 2005:54). In general, the sample for qualitative studies is smaller than those for quantitative studies. It is seldom possible to include the whole population in a study – even in a quantitative study. The ‘population’ refers to all the people in the country (or the world), that would meet your research criteria. You could for example, be interested in how female supervisors see their opportunities for promotion in a car manufacturing industry. There are thousands of female supervisors in a car manufacturing industry throughout the country, and it will be impossible to reach all of them. Thus, you will choose a *sample* of female supervisors which will represent the whole population of female supervisors in a car manufacturing industry.

There are different ways in which you can choose a sample, but first, you must decide what the criteria would be for selecting these individuals.

Let us use the example of female supervisors in a car manufacturing industry again. To choose who you want to include in your sample, you can go about it as follows:

* female supervisors from different car manufacturing companies
* female supervisors between the ages of 25 and 35 years
* African, Indian, Coloured and White female supervisors

This is how you decide who to include in your study, and who to exclude. In the above example you have excluded all female supervisors younger than 25, and older than 35. As long as you can say *why* you have decided to use this criterion, it is valid to limit your sample to this group. Remember that you should always describe your decisions. Your sampling should be part of the internal logic of your study and is part of the planning for your study (Punch, 2005).

Let us look at the different ways of sampling. In your proposal you will indicate which method you chose (Creswell, 2014):

* ***Random sampling***, (also called ‘probability sampling’), means that every person in the population has an equal chance to be included in the study. This method of sampling is useful if you want to include a *representative* sample, which means that your sample will represent (or reflect) the whole population. If you have the list of all female supervisors in a car manufacturing industry in the country, for example, then you can choose every 100th supervisors from the list (you will decide on the number based on the fraction of the number of people that you want to study, for example 10%).
* ***Convenience sampling***, (also called ‘non-probability sampling’) is when you are not able to access the whole population, as in the example of all female supervisors in the country given above. Then you will sample from that group of people, which is convenient to sample. Staying with the example of the female supervisors, you will do convenience sampling if you plan to do your study only in Gauteng. Again, you have to explain why you have chosen to take this approach. Convenience sampling is often done due to practical constraints such as time and funding.
* ***Purposive sampling***means that you sample your research subjects for a particular purpose. If you are undertaking a study where your respondents are experts, for example, then there is no point in sampling people who knows nothing of the topic. You will then choose people based on their knowledge and expertise in terms of the research topic to participate in the study.

Therefore, in research studies you will indicate (Punch, 2005):

* Your sampling strategy – which method you chose (random, convenience or purposive sampling) and why;
* The size of your sample – how many people will be involved, and why;
* How sample units will be chosen – your list of criteria for choosing a person to participate, and why.
	1. **DATA COLLECTION**

The most commonly used data-collection methods in both quantitative and qualitative research approaches are observations, surveys (questionnaires and interviews) and field-work. Each of these methods will be adapted to the research logic and research approach.

Table 6.1 provides a brief overview of some basic methods of data collection.

|  |  |  |  |
| --- | --- | --- | --- |
| **Method**  | **Overall purpose**  | **Advantages**  | **Challenges**  |
| Questionnaires, surveys, checklist  | When you need to quickly and/or easily get information from people in a non-threatening way | * Can be completed anonymously
* Inexpensive to administer
* Easy to compare
* Can be administered to many people
* Can get lots of data
* Many sample questionnaires already exist
 | * Might not get careful feedback
* Wording can bias client’s responses
* Are impersonal
* In surveys, may need sampling expert
* Does not get full story
 |
| Interviews  | When you want to fully understand someone’s impressions or experiences, or learn more about their answers to questionnaires  | * Get full range and depth of information
* Develop relationship with interviewee
 | * Can be flexible with interviewee
* Can take much time
* Can be hard to analyse and compare
* Can be costly
* Interviewer can bias interviewee’s responses
 |
| Documentation review  | When you want an impression of how a programme operates without interrupting the programme; taken from review of applications, finances, memos, minutes, etc. | * Get comprehensive and historical information
* Does not interrupt programme or client’s routine in programme
* Information already exists
* Few biases in information
 | * Often takes much time
* Information may be incomplete
* Need to be quite clear about what you are looking for
* Not a flexible means to get data; data restricted to what already exists
 |
| Observation  | To gather accurate information about how a programme actually operates, particularly with regard to processes  | * View operation of a programme as they are actually occurring
* Can adapt to events as they occur
 | * Can be difficult to interpret seen behaviours
* Can be difficult to categorise observations
* Can influence behaviours of programme participants
* Can be expensive
 |
| Focus groups  | To explore a topic in depth through group discussion, e.g. about reactions to an experience or suggestion, understanding common complains, etc.; useful in evaluation and marketing | * Quickly and reliably get common impressions
* Can be efficient way to get much range and depth of information in short time
* Can convey key information about programmes
 | * Can be hard to analyse responses
* Need good facilitator for rapport and closure
* Difficult to schedule 6-8 people together
 |
| Case studies  | To fully understand or depict respondent’s experience in a programme and conduct comprehensive examination through cross-comparison of cases  | * Fully depicts respondent’s experience in programme input, process and results
* Powerful means to portray programme to outsides
 | * Usually quite time-consuming to collect, organise and describe
* Represents depth of information, rather than breadth
 |

**Table 6.1: Some basic methods of data collection** (Coldwell & Herbst, 2004)

The most commonly used data collection tools for action research include questionnaires, interviews, documentary evidence, field diaries and notes and observation (Koshy, 2010).

* + 1. **Questionnaires**

As you know, questionnaires are usually associated with quantitative research, but it is often used in conjunction with qualitative approaches. It can be used as an exploratory tool (Koshy, 2010: 83):

For example, if you are carrying out a study on how an intervention programme may help to change student attitudes towards learning a particular subject, use of a questionnaire will provide you with a simple means to collect information on student attitudes, before any intervention takes place [giving the basis for comparison]. You can use both closed and open-ended questions in the questionnaire, but always keep in mind that you must think about how you will be analysing your responses. Closed (or short) questions usually require short answers. You can only respond ‘yes’ or ‘no’ to these types of questions. A common form of closed/short questions is multiple choice questions.

However, open-ended questions require a much more detailed response. ‘The answers could come in the form of a list, a few sentences or something longer such as a speech, paragraph or essay. These questions cannot be answered by a ‘yes’ or ‘no’ – it needs an explanation. They are very useful in questionnaires, but can be difficult to analyse, so keep them simple.

Koshy (2010: 83) gives some guidelines for the development of questionnaires:

* keep the questionnaire simple. By designing appropriate questions, you can often gather a decent amount of data using a small number of questions
* consider how you are going to analyse the responses to the questions at the time of the design
* start with questions about the factual information required
* use simple language which the respondents will understand
* the use of closed questions are easier to analyse than open-ended questions
* avoid leading questions
* take account of the reading ability of the respondents who will complete the questionnaire
* always assure your respondents (or other research subjects) that their anonymity will be kept
* always test your questionnaire before using it so that you can make adjustments if necessary
* you can use pictures instead of words – especially for younger or older respondents.
	+ 1. **Interviews**

Interviews give rich and informative data. In most cases interviews are done one-on-one. Because you do not want to stop the flow of the conversation, interviews are usually recorded with a tape-recorder. Then you can listen to the conversation again in case you have missed something during the interview, and transcribe it in the form of text. Text is easier to analyse than a recording.

There are two types of interviews: structured and semi-structured. In structured interviews you will have a set of pre-designed questions, and you will ask only these questions, in the order in which you have designed it. For semi-structured interviews, you also prepare a set of questions, but you can use sub-questions to delve deeper into what your interviewee is saying. This is a much more flexible approach.

Look at the following example of semi- structured interview questions:

* Introductory question – ‘Can you tell me about your first experience you encountered a conflict?’
* Follow-up question – ‘How did you resolve the conflict between two employees?’
* Probing question – ‘What was the outcome?’

Some management-researchers use open-ended interviews where only a general question is used and the employee is encouraged to answer as fully as possible, for example (Koshy, 2010: 87): Why do you think you go to work? What do you like or dislike about working here?

Koshy (2010: 87) again gives some guidelines in respect of interviews:

* your interviewee needs to feel protected – choose a comfortable place for the interview
* make sure the interview is not too long, especially with young interviewee. Even older interviewee cannot maintain concentration for more than 30 to 40 minutes.
* explain the purpose of the interview
* remember to assure the interviewee that their identity will be protected
* start with factual questions
* do not give your opinion – stick to the questions
* avoid leading questions
* open-ended questions will provide rich detail, especially if you encourage the interviewee to elaborate by saying: ‘Tell me more’; or ‘How would you explain that to someone who knows nothing of this matter?’
	+ 1. **Documentary evidence**

Documentary evidence can be any formal documents such as policies, minutes of meetings, planning records, or employees’ work (Koshy, 2010). These sources can often provide a useful background and context for the project and can also be very illuminating, especially when you are comparing what is claimed and what has happened in practice. A good example of policy documents are policies on assessment. Other examples of formal documents include employee records. Koshy (2010) warns that only the most relevant documentary evidence should be used. If not, the management-researcher could become overwhelmed with too much information. You want the documents to support other evidence found.

* + 1. **Field diaries and notes**

A field diary or field notes is a record of your own thoughts – almost like a journal which you keep with you all the time to jot down any ideas or observations as your research project unfolds. Here you can write your own commentary on what you see, and start interpreting the findings of the research. In action research, a field diary is an especially useful tool to develop reflective abilities in you as the researcher. Koshy (2010) have the following to say about field diaries:

* allow yourself to freely write down any comment or observation
* keeping your research question in mind is very important. Your field diary should not become rambling waffle. However, allow for observations that you did not expect in relation to your research topic
* reflective writing is a skill that you will obtain using a field diary. Be analytical in respect of your observations
* your field notes may become a very important record of your own growth and development – use these notes as part of your research report.
	+ 1. **Systematic Observation**

Observation is a critical element of the action research methodology. It is not a difficult thing to do – we naturally observe people and events. In action research we just need to do so deliberately, and with a particular purpose in mind. When we ‘observe’, we do so in relation to the problem identified, the plan that we developed and the intervention that we have implemented. Your observation is therefore focused on your action (intervention) in order to solve your problem. This means that you need to know what you are looking for – structure your observation.

Koshy (2010) talks about two types of observers: a participant observer; and a non-participant observer. In action research we are participant observers because ‘the researcher is living in the context’ of the study (Koshy, 2010). If your study involves the employees in your company/workplace, then you and your employees are both participants. The danger that we need to be aware of as participant observers is our own subjectivity – this is where the ethics of conducting your research and your data collection comes in: you need to be aware of your own possible preconceived ideas, and try, through your research methods, to counter bias (it is doubtful whether any researcher can be without bias entirely, but it is important to acknowledge your possible bias).

Non-participant observers, on the other hand, do not get involved in activities being observed at all. In fact, the researcher will try to be as unobtrusive as possible by quietly sitting in the corner, or by observing from a distance. Koshy (2010) suggests that a predetermined checklist will help you to focus your observation. However, as always, remain open to surprising and unexpected observations – these surprises are often the most significant findings for your study.

To aid your observation, you can video-tape your workplace. The advantage of this method is that you, as participant-observer does not need to interrupt yourself to make notes – you can make notes as you watch the video afterwards. However, be aware that video-recording can be disrupting, and shy employees may not want to participate at all. To overcome this, your employees need to be familiar with the camera. Introduce the idea of the camera long before your intended observation.

This brings us to the end of the discussion on data collection techniques for action research. Importantly, these methods can be used in any other form of research, as appropriate. The data collection method must always fit the research question. The research question determines how and what data you will collect.

* 1. **DATA ANALYSIS**

Once you have selected the topic of the research and have gone through the process of literature survey, established your own focus of research, selected the research paradigm and methodology, prepared your own research plan and have collected the data; the next step is analysis of the data collected, before finally writing the research report.

Most people plan their research in relation to a question that needs to be answered or a problem that needs to be solved. They then think about what data they need and the techniques they use to collect them. You are not unusual if early on in your research you consider whether you should, for example, use a questionnaire or undertake interviews. In coming to this central point you need to explain why you made the choice you did so that others can see that your research should be taken seriously (Crotty, 1998). Consequently there are important outer layers of the onion that you need to understand and explain rather than just peel and throw away!

Data analysis is an ongoing activity, which not only answers your question but also gives you the directions for future data collection. Data analysis procedures (DAP) help you to arrive at the data analysis. The uses of such procedures put your research project in perspective and assist you in testing the hypotheses with which you have started your research. Hence with the use of DAP, you can

* convert data into information and knowledge, and
* explore the relationship between variables.

Understanding of the data analysis procedures will help you to

* appreciate the meaning of the scientific method, hypotheses testing and statistical significance in relation to research questions
* realise the importance of good research design when investigating research questions
* have knowledge of a range of inferential statistics and their applicability and limitations in the context of your research
* be able to devise, implement and report accurately a small quantitative research project
* be capable of identifying the data analysis procedures relevant to your research project
* show an understanding of the strengths and limitations of the selected quantitative and/or qualitative research project
* demonstrate the ability to use word processing, project planning and statistical computer packages in the context of a quantitative research project and report
* be adept of working effectively alone or with others to solve a research question/ problem quantitatively.

It is also crucial to understand the main ethical issues implied by the choice of research strategy (Saunders *et al.,* 2009). Acquiring knowledge in a controlled manner implies that the conditions, under which the data was obtained, represent the conditions to which the data will be applied. For example, obtaining a group of golfer’s preferences for cricket bats might yield results from an uncontrolled experiment, but such results would have no value.

* 1. **INTEGRITY PROCESSES**

The measurement of a variable involves relating a qualitative value to a parameter being investigated by the researcher. The researcher wishing to measure a variable should briefly review the method that he has chosen for the measurement and ask himself if the measurement meets a certain criteria.

* + 1. **Validity**

Validity in academic research means that a relational measure is valid to the extent that it actually measures what it intended to measure (Wasserman & Faust, 1994). Does the research give a true picture of reality? Are the findings valid?

* + 1. **Replication or repeatability**

Information or data is said to be repeatable if repeated measurements give the same result to within an acceptable accuracy. If five measurements of the distance from Pretoria to Johannesburg are made and the following results are obtained, 30,1km, 30,0km, 30,2km, 30,0km, and 29,9km, the measurements indicate that the distance from Pretoria to Johannesburg is 30,0km, and the measurements may be considered to be repeatable to within a standard deviation of 0,101km. The results are repeatable, but inaccurate, and while on the surface may appear to represent the actual distance between the cities. However, if the measurement has to be accurate to within 100m, then the data cannot be used. While the example given applies to a very simple application, the conceptual approach applies to many situations in real life. The accuracy and value of all data used in any decision-making process should be validated to ensure its usefulness. In the same manner, the accuracy and reliability of opinion polls may be determined. In this case the data errors may be defined in terms of spoilt papers, and inaccurate counting. Where inaccurate data or information is used in successive calculations, the inaccuracy may increase, rendering any final result worthless. Therefore, decisions based on calculations in which initial data errors are multiplied, can be disastrous.

* + 1. **Accuracy**

The accuracy of a value defines how closely it reflects the true value. For example, if the actual distance from Johannesburg to Pretoria is 55 km and a measurement of the distance is 44,9km, then the error is 0,1km, or 0,2%. If this error is acceptable for the use to which the value of 44,9km will be put, then the result may be considered to be accurate, at least to 0,2%. It may well be that an accuracy of 0,2% may not be acceptable for some purposes, and as such, the input data may not be usable.

In effect, the use of any data depends on its accuracy and should be known to enable any conclusions based on the data, to be used with confidence.

* + 1. **Reliability**

Reliability is related to accuracy. In the case of scientific measurements, reliability may be defined in terms of the calibration of an instrument, to give accurate results. If an instrument gives results that are 10% too low, the results could be said to be unreliable. Similarly, the opinions of marketing gurus on the potential uses for modern computational techniques would be probably unreliable.

* + 1. **Representativeness**

Is the research showing us what is typical? Positivists are very interested in representativeness. An example: Girls from a village in Zimbabwe do much better than the boys at school. However, when they start working the boys get paid more in their jobs than the girls.

* + 1. **Data integrity of non-scientific knowledge**

The modern approach to knowledge is to accept narrative knowledge as a form of knowledge. Knowledge that is passed from one generation to another by word of mouth, such as how the sun was formed, may be accepted as true. However, could such information be used as a basis for making scientific decisions, or structuring the evolution of a planetary system? Conversely, the existence of an animal species could be passed on through generations, after the species did in fact disappear, and the information could be correct. The problem is to base decisions on factual information.

* **Authority**

There was a time when figures in authority claimed that the earth was the centre of the universe and everything in the universe rotated around the earth. This was disproved. It is believed by some who have many years of experience in academic institutions, and who hold senior academic positions, that a semester course in mathematics cannot be learnt by students over a two-week period. An experiment was carried out at a local university where this authoritative ’knowledge’ was proved incorrect, but generally accepted as correct, and as ‘the truth’.

While the value of sound experience in any field cannot be discounted and can be an invaluable source of information, the requirement to verify the accuracy and reliability of any information used in a decision-making process is essential.

* **Opinions**
* ***Peers***

Knowledge may be sought from colleagues, friends or professional contacts on the basis that in the particular field of interest, and colleagues being familiar with the field, they have knowledge that would be useful, or used as input information. Due to the limited number of peers, the breadth and reliability of such information could often be suspect. Such information, unless substantiated scientifically or authenticated through other research methods would not stand up to scrutiny or of use in a professional research environment.

* ***Polls***

A poll is an example of survey research.

* ***Surveys***

Collins and Hussey (2003) describe a survey as a positivistic methodology whereby a sample of subjects is drawn from a population and studied to make inferences about the population.

* ***Traditions or accepted truth***

Traditions, accepted as truth, are passed from generation to generation, often with the degree of truth increasing with successive generations. While the value of traditions in developing cultures should not be underestimated, it is essential to keep in mind that when using traditional truth as a basis for implementing decisions, the accuracy of the knowledge would determine the success of the decision. An example is where the design of the trajectory of an unmanned vehicle from the earth to the moon, based on the obvious fact that the sun spins around the earth, would be doomed to failure. The acceptance of the inferiority of women may, in some cultures be considered to reflect a scientific truth. However can this be substantiated on any scientific basis?

* ***Systematic observation***

Systematic observation implies that data is collected using a well-defined system that would reduce the element bias in the information. For example, the daily average consumption of electricity used in South Africa during June, even if it is measured with great accuracy every day during this month, would not give a reliable indication of the average daily demand for electricity on an annual basis. There is a clear bias, resulting from a research project that was not designed to acquire data in a systematic manner.

* ***Objectivity***

Objectivism integrates subjectivity and objectivity because it argues that objective knowledge requires active, sophisticated subjective processes—such as perception, analytical reasoning, synthetic reasoning, logical deduction, and the distinction of essences from appearances. Conversely, subjective processes can enhance objective comprehension of the world.

## STRUCTURE FOR THE REPORT

The report should include the following elements:

| **Elements** | **Description** |
| --- | --- |
| **Your Personal Front Page** | With all the relevant information flowing logically. Include your WBC title. |
| **Executive Overview** | A summary of the entire Report in 1–1½ pages: |
| **Written in past tense** | Short concise paragraphs. Briefly cover the issue researched, and the reason it was researched, your key findings, main recommendations and business or organisational benefits. |
| **Contents Page** | * Structured with headings and sub-headings, an appropriate numerical numbering system and page references.
* Include the tables, graphs and appendices.
 |
| **Introduction** | Introduce the work based challenge by:* Giving a brief, relevant overview of the workplace/organisation.
* Explain why the topic is being researched i.e. what is or is not happening currently.
 |
| **Objectives:** | * Primary objective is similar to your work based challenge title. Secondary objectives should indicate your logical steps or activities.
 |
| **Research Methodology:** | * Outline the approach taken to obtain the findings
* Any problems encountered and deviations from your original plan
 |
| **Data Collection:** | * Present a summary of your relevant and appropriate internal and external data collected, practical and theoretical data, qualitative and quantitative data. Make effective use of tables, graphs, figures and appendices. All need to be clearly numbered and titled and the sources must be acknowledged.
 |
| **Data Analysis and Discussion:**  | * A critical and objective analytical review of the findings, which makes use of the tools, models and methods, learnt during the programme and from additional sources. The more thorough and in depth your analysis, the better your outcomes will be.
 |
| **Outcomes/Findings:**  | * A summary of the key findings of your research on the issue.
 |
| **Recommendations and Action Plans:**  | * Based on the insight gained during the investigation and analysis, what would some of the high value options and alternatives be to improve the situation, or take advantage of the opportunity? Your recommendations should show your level of business understanding and insight into the issue being investigated. You could practice your recommendations. Your action plans should be well detailed indicating what needs to be done, why, how, where, and when. You could tabulate your action plans.
 |
| **Implementation Issues or Factors:** | * Highlight two or three key issues or factors, which will need to be taken into consideration by management to ensure that your recommendation will be successfully implemented.
 |
| **Learning experience:** | * It is very important that the most significant learning experiences for the individual and the group are reflected upon. Write a short paragraph on your key learning points from the modules.
 |

**Table 6.2: Structure for the Report**

|  |  |
| --- | --- |
| C:\Users\Design\OneDrive\Icons\Other\Pin.png | **Take Note** Use all these headings to plan and structure your research and your report.Please keep hard and soft copies of the submissions for future reference. |

## Work-Based Challenge Submission Requirements

When submitting your document please adhere to the aspects highlighted in the **checklist** below.

| **Requirement** | **Yes** | **No** |
| --- | --- | --- |
| 1. Follow guidelines as explained in the Professional Writing Guide to present the work in a professional manner
 |  |  |
| 1. Acknowledge all sources and references
 |  |  |
| 1. Indicate your overall word count.
 |  |  |
| 1. Be concise, clear and convincing.
 |  |  |
| 1. Use and refer to tables, figures, graphs and charts to condense data and present it clearly.
 |  |  |
| 1. **Argue your response within the parameters of the report structure**.

When your organisation does not have the system or concept in place, acknowledge this deficit prior to describing the ideal situation and the potential problems of implementing it within your organisation and industry.  |  |  |
| 1. **Create a pattern of ideas by opening each paragraph with a new topic or idea.**

The subject of the paragraph is immediately evident then followed by supportive material that could otherwise be confusing. Limit paragraphs to a single topic to facilitate comprehension and to ensure that there is sufficient explanation of a concept. Use bold lettering to highlight or emphasise a key concept. |  |  |
| 1. **Integrate any references.**

Weave any quotations into your argument; do not leave them as standalone statements. All *references must be acknowledged;* at minimum, placed in quotation marks with the author's name in brackets. More comprehensive footnote referencing is available in some software packages. Books or other material which you have utilised must be listed in a **bibliography/list of references. Refer to the Professional Writing Guide.** |  |  |
| 1. **Use Appendices**

To incorporate additional research material and figures. These should be clearly numbered and titled so that reference to the information or diagram in the body of the report is clear. Be consistent with terminology – Appendix, or Annexure, or Addendum. |  |  |
| 1. **Keep the tone objective**

Your work should be business-like; well-structured and objective. On the whole, restrain your enthusiasm; avoid exclamation marks and value-laden statements "I believe…." |  |  |
| 1. **Re-read your work**

If possible after considerable time (a day or so). This allows you to eliminate unnecessary errors that can be missed by computer checks. Proofreading is essential with any professional business document. |  |  |
| 1. **Plagiarism**

On each of the cover sheets you are asked to make a formal declaration that the work submitted is your own and that of your syndicate. Any suspicion of cheating or plagiarism will be treated seriously and may result in disqualification. |  |  |

## Table 6.3: WBC submission requirement

## Document Review

Review the look and feel of the submission. You can use the following **guidelines**:

|  |  |
| --- | --- |
| C:\Users\Design\OneDrive\Icons\Other\Pin.png | **Take Note:*** **Plan before your write.**  Use mind-mapping to determine the key points and to identify ways to incorporate ideas from the programme and additional reading. Structure your material to show the logic of your answer.
* **Refer to your mind maps of the module content** for relevant theories, models or concepts.
* **Take a structured approach** highlighting key categories with subtitles and emphasising the categories of content with appropriate numbering. Use key words from a process or model under discussion as a foundation, e.g.

**The Competitive Nature of Industry*** Analysis using Porter's Model
* Competitors
* Suppliers
* The Most Powerful Force
* Positioning the Business
 |

Please note that it is within the scope of the work based-challenge to actually implement the suggestions or recommendations. Your brief is to identify and research a specific topic/issue and make recommendations on how you believe management could address the issue.

Your work should provide a compelling incentive (benefits) for the company/workplace to allocate further resources for implementation. Where and how can the company/workplace get a better return on investment?

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