

WRITING A RESEARCH ASSIGNMENT

- ◆ The essay should be divided into paragraphs, beginning with an Introduction, then having several paragraphs in the Body, and summing up with a Conclusion.
- ◆ Each paragraph should have its own idea.
- ◆ The first sentence in each paragraph is the Topic Sentence which concisely explains the idea of the paragraph.
- ◆ Paragraphs should have linking words so that the flow of ideas appears logical.
- ◆ Language used should be neutral with few emotive words.
- ◆ As much as possible, the ideas should be supported by factual data.
- ◆ A bibliography should also be included (Refer to 'Bibliographies').
- ◆ It should be noted that the following example is simply meant to show the genre format, and in no way is meant to represent the view of Education Queensland.

EXAMPLE OF A RESEARCH ASSIGNMENT -
IN VITRO FERTILISATION

<i>INTRODUCTION 1- Outline of human reproduction</i>	Human reproduction is the process of joining a male sperm cell and a female egg cell in the fallopian tube for the production of new life and the continuation of genetic material from generation to generation. The process has many factors - sufficient healthy male sperm, available healthy female egg, an optimum level of female sex hormones to ensure ovulation fertilisation and gestation, a healthy fallopian tube for the union of gametes to occur in the short fertile period of approximately 24 to 48 hours, and a healthy uterus to carry the unborn baby. IVF (<i>in vitro</i> fertilisation) may be utilised when one or more of these factors is absent.
<i>INTRODUCTION 2- Outline of IVF</i>	<p>In IVF, the union of the sperm and the egg occurs in the laboratory after both sperm and eggs have been collected, and the fertilised eggs are transferred to the woman's womb to continue growing. There are 6 major steps in the IVF process which are done on an out-patient basis:</p> <ol style="list-style-type: none"> 1. Stimulation and monitoring of the development of maturing egg/s in the woman's ovaries - Fertility drugs are given daily to control the time of ovulation of more than one egg, and to override the woman's own hormonal cycle. 2. Collection of the eggs - After several egg follicles appear on ultrasound to be nearly mature, another hormone is injected for the final maturation. Under local anaesthetic, a probe is inserted up to the ovary and the eggs are then aspirated into a test-tube. 3. Collection of the sperm - Shortly after egg retrieval, the man is asked to provide a sperm sample. 4. Either incubation of the egg/s and sperm together, or injection of the sperm into the egg, and subsequent fertilisation and early embryo growth to occur in the laboratory - Approximately 50 000 sperm are added to each aspirated egg in separate test-tubes and placed in incubators. 5. Transfer of the live embryo into the woman's uterus - A

	<p>maximum of three embryos are transferred into the uterus of a woman under 35 years of age, and four embryos are inserted for a woman over 35. Surplus embryos are frozen with the parents' consent for future attempts.</p> <p>6. Two to three weeks of waiting to determine initial success - A pregnancy test and ultrasound confirms pregnancy or otherwise within three weeks of embryo transfer.</p> <p>In all, IVF is a very lengthy procedure which has high emotional and financial costs.</p>
<i>THESIS AND OUTLINE OF MAIN ARGUMENTS</i>	<p>IVF is unnecessary and should not be permitted. Despite the fact that tens of thousands of healthy children have been born worldwide with the oldest 'test-tube baby' being 21 years of age now, and the fact that some endangered animal species may be saved as a result of IVF research, scientists are still interfering with nature. The risks are enormous, success rates are low, the emotional roller-coaster of success and failure stressful, and the financial costs to both IVF participants and tax-payers is excessive.</p>
<i>ARGUMENT 1- For-Positive emotional outcomes</i>	<p>The experience of infertility would be traumatic - both emotionally and physically - and the birth of a couple's baby assisted by IVF could produce immeasurable rewards. Failure to conceive could destroy self-esteem and sexuality. A person may feel 'less of a woman' for being able to conceive and bear children naturally, or 'less of a man' for inability to produce sufficient sperm cells for natural fertilisation. Each partner may feel as though he/she was letting the other down, leading to further emotions of frustration and resentment. To compound these anxieties further, the person's cultural heritage and religious faith may increase existing doubts of self-worth.</p>
<i>ARGUMENT 2- For-Civil liberties of married infertile couples</i>	<p>There is a strong correlation between increasing maternal age and a reduction in the ability to conceive. About 1 in 7 couples is infertile if the wife is aged between 30 and 34 years, 1 in 5 if the wife is between 35 and 40, and 1 in 4 for women between 40 and 44. In general, most IVF programmes find that the success rate is better in a woman under 37 years of age, and drops markedly with high miscarriage rates in women over 40. With an improvement in the overall education and career pursuit of the female workforce, more and more women are delaying childbirth. The Singaporean government recently was so alarmed at the prospects of a reduction in population that it offered substantial financial bonuses to women choosing child-bearing at an earlier age. The association between a reduction in fertility and increasing father's age is much less. Childhood mumps, however, can leave a man infertile. So, it may be considered acceptable for a married couple who have delayed child-bearing until after they have provided a more secure future for those children to be placed in an IVF programme if other reproductive treatments fail.</p>
<i>ARGUMENT 3- For-Advancement of</i>	<p>The scientific research surrounding IVF could have great benefits in non-human areas such as agriculture and</p>

<p><i>scientific research and animal conservation</i></p>	<p>conservation. For some time, it has been known that an increased number of offspring could be produced if the IVF-produced embryos of animals with well-adapted traits were carried in the wombs of surrogate mothers. These mothers could be from another similar species whose size and gestation periods are alike. This could increase the productivity in animal husbandry as well as saving endangered species. For example, a zebra foal has been born to a surrogate horse.</p>
<p><i>ARGUMENT 4- Against- Legal implications arising from IVF use by single, lesbian and surrogate mothers, and in ownership and use of embryos</i></p>	<p>However, problems in many forms arise with potentially unsuitable parents and unneeded embryos. The nuclear family of mother, father and children is changing with the increase in divorces but it still probably the most stable environment in which to raise a well-balanced child. Despite the outcries of civil liberties, the bringing into the world of IVF children by single mothers and homosexual couples would simply cause more complications for the children. Even married couples who appear worthy of medical help to achieve conception may be childless as a result of a pelvic inflammatory disease brought on by pre-marital sexual intercourse and contraceptives, or as the result of genetic or chromosomal abnormalities. Which of these people involved should have legal ownership of embryos? Should the ownership of embryos belong to the egg donor, the sperm donor, a surrogate mother whose womb has been the incubator, or the IVF medical team? What is to be done with surplus embryos, and when can they be used for scientific research? At present, an embryo belongs to the woman who carries it for the nine months' gestation period, which has led to highly controversial and traumatic custody battles. In Victoria, experimental studies can only observe up to the fertilisation process, unless there is written parental consent and the approval of a government ethics committee to allow further studies to be done on surplus embryos. In the United Kingdom, legislation states that embryos in IVF programmes can be studied up to 14 days after fertilisation, at which time a new individual or individuals would be beginning to form. However, embryos for scientific research must be spare and donated by the biological mother.</p>
<p><i>ARGUMENT 5- Against-Negative emotional outcomes</i></p>	<p>Despite the rewards a child can bring, an individual is no less worthy because he/she is unable to produce children. Many childless couples bond closer together as a result of unspoken sadness and hope, and find a mutual support and sharing that they may not otherwise have experienced. An adopted child may be the answer since so many unwanted children grow up without loving parents. Also since IVF parents are frequently in their late 30's at conception, the children may grow up with 'old' parents who no longer have the vigour for their children's needs. IVF and its lack of privacy and increased stress particularly in surrogacy situations will not remedy an emotional situation where a couple is less emotionally stable.</p>

<p><i>ARGUMENT 6- Against- Invasiveness of IVF procedures</i></p>	<p>The number of procedures that an infertile person must undergo to firstly determine the cause of infertility and secondly to undertake the complex and invasive IVF procedures is astounding. Before commencement of IVF treatment, a woman is subjected to daily temperature charts to determine the day of ovulation, an invasive cervical examinations within hours of sexual intercourse, a laparoscopy and frequent hormone tests. During IVF treatment, more internal procedures would be performed on the woman, and a man would be expected to produce sperm samples in uncomfortable circumstances. In all, privacy disappears as medical eyes observe the progress - successful or otherwise.</p>
<p><i>ARGUMENT 7- Against-Risks and success rates</i></p>	<p>The 'take-home baby' rate after IVF treatment varies, but is generally regarded as very low. The most common point of failure is when embryo transfer does not result in pregnancy. The means of implantation of the embryo/s into the uterus requires considerable improvement. Other areas where problems arise include side-effects of hormonal drugs, hyperstimulation of the ovaries, discomfort of blood sampling and other medical procedures, possibility of internal infection of the woman, ectopic pregnancy where the foetus begins to grow in the fallopian tube, foetal test risks and multiple pregnancies for unprepared parents. Fathers with a sperm problem may well be postponing the problem if their sons also inherit the same abnormal trait. The long-term effects of IVF are still unknown. Although the oldest 'test-tube baby' is 21 years old and the chance of an abnormal child being born being the same as the risk of a normal pregnancy, there is insufficient research of the long-term effects for mother and child at this stage.</p>
<p><i>ARGUMENT 8- Against-Financial implications</i></p>	<p>In 2000 for Australians with top private health cover, a complete treatment cycle of IVF costs between \$1500 and \$2000. For Australians without or ineligible for private health cover, the costs increases by about another \$500. Storage of frozen embryos is approximately \$200 for the first 6 months and \$125 for every 6 months thereafter. Frozen embryo thawing and transfer cycles each cost about \$350. When one takes into account the low success rate, that several attempts are required to achieve a healthy pregnancy, that the procedures are done at selected out-patient facilities and prospective parents need time off work and must travel to these centres, the cost to the IVF participants is expensive. An expected amount for a successful pregnancy would be about \$10 000. However, a greater cost of IVF is accepted by the Federal government in Australia which means that tax-payers are left to pay for the substantial remainder.</p>
<p><i>CONCLUSION AND RESTATEMENT OF THESIS</i></p>	<p>In conclusion, it should be restated that IVF is generally unnecessary in our overpopulated society. For those married participants in IVF programmes, many have brought the childless problem on themselves by deliberately delaying</p>

	<p>child-bearing. The success rates are too low, and the risks and costs are too high to warrant further use of IVF. Added to that, there are insufficient ethics legislation in place to stem the flow of scientific research that could get quite out of hand if not checked appropriately.</p>
<p><i>BIBLIOGRAPHY</i></p>	<ul style="list-style-type: none"> ◆ Evans, B., Ladiges, P. and McKenzie, J. 1991, <u>Biology in Context</u>, Melbourne, Rigby Heinemann ◆ Fisher, A., 1989, <u>IVF: The Critical Issue</u>, Melbourne, Collins ◆ 2000, http://www.ivf.org ◆ 2000, http://www.ivf.com ◆ 2000, http://www.sivf.com.au