**Research has shown that music can affect the ability to concentrate. Design an experiment that could be carried out in a classroom to test the effects of two different kinds of music on a task requiring concentration (eg word search).**

**You must use a repeated measures design.**

**In your answer you should:**

** fully operationalise the independent and dependent variables**

** provide details of how you would control extraneous variables**

** describe the procedure that you would use.**

**You should provide sufficient detail for the study to be carried out. (10 marks)**

The aim of the study is to compare the effects of different kinds of music on concentration. Based on the information given, it is predicted that pop music will impair concentration more than classical music. The hypothesis therefore would be:

The ability to concentrate, as measured by the number of nonsense words correctly transcribed in a typing task, will be better when the task is undertaken with classical music playing than when pop music is playing.

The independent variable is the music playing and there will be three conditions of this IV.

Condition 1 (the control condition) - no music playing during task.

Condition 2 - a hip hop track played during task

Condition 3 – a classical track played during task

Both types of music will be played at 60 db for the duration of the task to control for volume as an extraneous variable. The dependent variable will be the number of nonsense words correctly typed in 5 minutes. Nonsense words would each be 6 letters long and consist of consonants only, so they would have no meaning.

As concentration and typing skills vary quite a bit from one person to the next a repeated measures design will be used, as this would hold participant variables constant. However, this will mean that there would need to be 3 different typing tasks, each of comparable difficulty. The 3 different tasks would involve typing as many words as possible from a list of 50 nonsense words of equal length. To check the 3 tasks were of the same difficulty they could be piloted to see if people

take about the same time to type each list.

Because the participants are doing 3 tasks there may be order effects (either practice effects or fatigue effects) therefore the conditions need to be counterbalanced. With 1/3 doing the no music condition first. 1/3 doing the classical first and 1/3 doing hip hop first.

A B C

No music Hip hop Classical

Classical No music Hip hop

Hip hop Classical No music

The researcher would go to the secondary school and brief the Head on the aims of the study and get the Head’s consent to carry out the experiment with year 7 pupils. They would need to provide details of the aim of the study and the procedure get parental consent for all the children in the year. Once consent had been obtained they would need to get the consent of the pupils who would need to be told they had the right to withdraw.

The pupils would be then be randomly allocated to one of the 3 groups A, B or C. The experiment would take place in the computer room and group A would go first and would be given standardised instructions to put on the head phones and when told to, they should start to type the list of words provided. After 5 mins they would be given the second list to type and the classical music would be played. After a further 5 mins they would get the 3rd list with hip hop music being played. At the end the number of words correctly typed for each condition would be recorded. This would be repeated for the 3 groups. For each participant their score with hip hop and their score with classical would be recorded and I would expect their score with classical to be better than the score with hip hop. I would use a wilcoxen sign rank test to check the significance of the

difference. By comparing these scores with the control no music I could see if the quiet condition was better than either music condition which could be interesting.

**Examiner Comment**

The response is thorough and reflects good grasp of designing and conducting experiments. The

operationalising of the variables suggests this candidate has had some practical experience and the

correct/confident use of terminology reflects grasp of HSW. The procedure gives sufficient detail for

the study to be carried out. By including the control condition the candidate has probably over

complicated things. (10 marks),