USING BASIC TOOLS IN MICROSOFT WORD TO DEVELOP INTERACTIVE LESSONS FOR LEARNER PRACTICE: THE SKILL OF THE 'NEW' AFRICAN TEACHER

PETER BROWN & AUGUSTUS D. ARKO

In re-thinking teacher preparation, we believe African educationists should have a vision that mandates individual teachers, apart from being computer literate, to have proficiency in developing interactive lessons to induce student learning.

In African classrooms, where available, Information and Communication Technologies (ICT's) should change the way children are taught. Instead of learners using computers as part of instruction, teachers resort to teaching about computers, their applications and how to handle them. The productivity side of computer use in the general content area curriculum is neglected or grossly underdeveloped (Moursund, 1995). Educational technologists, describing what learners should know and be able to do with technology, advocate integrating computer skills into content areas, pointing out that information skills can be integrated effectively when the skills directly relate to the content area curriculum and to classroom assignments (Lorenzen, 2003).

There is increasing recognition that the end result of computer literacy is not knowing merely how to operate computers, but to use technology as a tool for organization, communication, research and problem-solving., moving from teaching isolated technology skills to an integrated approach. Information skills can be integrated effectively when the skills directly relate to the content area curriculum and classroom assignments and are tied together in a logical and systematic *information process model*.

Literature Review

In an impact evaluation of technology application in 75 classrooms, in the USA, Kulik (2003) found out among others that students who used computer tutorials in natural science, mathematics and social science scored significantly higher on tests in these subjects. Moreover, that primary school students who used tutorial software in reading scored significantly higher on reading scores, while very young students who used computers to write their own stories scored significantly higher in measures of reading skills. Nevertheless Kulik (2003) found out that the mere use of computer-based laboratories did not result in higher scores.

In developing countries, six existing studies present generally positive conclusions by Linden et al (2003). Linden et al (2003) designed an impact evaluation of a computer assisted learning programme in Vadodara, India on cognitive skills using mathematics and language tests. The authors found a positive and significant impact on mathematics scores of 0.375 standard deviations. Similarly, Linden (2008) finds positive effects of a remedial mathematics programme implemented on a supplemental basis, but negative effects when implemented on a pull-out basis as a substitute for the regular teachers' instruction. In other words, the teacher factor is very important and significant for pupil academic success and that the computer can never replace the

teacher. Fang, He & Linden (2008) again found strong positive effects on Indian students' English scores of an electronic English-based curriculum.

On the other hand, other evaluations did not find such consistent positive results. Angrist & Lavy (2002) found no effect in their evaluation of the "Tomorrow-98" programme which placed 35,000 computers in schools across Israel between 1994 and 1996. Angrist & Lavy (2002) found no impact on mathematics and Hebrew scores at the 4th or 8th grade level.

An evaluation of the World Links programme by Kozma & McGhee (1999) and Kozma et al (2004) found positive impact for both students and teachers. The World Links programme prepared students and teachers on communication, collaboration and internet skills in African and Latin American countries. In Uganda, a specially designed performance assessment found that World Links schools outperformed non-World Links schools on measures of communication and reasoning with communication (Queillmaltz & Zalles, 2000).

 General conclusions that seem to emerge from the literature reviewed is that positive outcomes of the use of computers in schooling are linked to changes in pedagogy, and that introducing technology alone will not change the teaching and learning process. Again that it is not enough to install computers in schools without training (InfoDev, 2005).   Barrera-Osorio & Linden (2009) reporting on the use and misuse of computers in education presented an evaluation of the Computers in Education programme in Colombia. The programme aimed to integrate computers donated by the private sector into the teaching of language in public schools. That authors conducted a two-year randomized evaluation of the programme using a sample of 97 schools and 5,201 children. The overall conclusion was that the programme seemed to have had little effect on students' test scores and other outcomes, consistent across grade levels, subjects and gender. The main reason for these negative results was the failure to incorporate the computers into the educational process. Although the programme increased the number of computers in the treatment schools and provided training to the teachers on how to use the computers in their classrooms, surveys of both teachers and students indicated that teachers did not incorporate the computers into their curriculum (see http://go.worldbank.org/UISOPZGMAO) .

The specific conclusion thus argues for the integration of computers into classroom lessons by teachers to achieve better results and that a teacher-supported scope and sequence of skills, well designed projects and effective assessments become critical (Eisenberg & Lowe, 1999).

MS Word's Macros and Forms tools

Taking cognizance of the above requisites, we seek to develop awareness that Microsoft Word (MS Word) is a powerful programme having all the tools necessary for producing computerized practice and testing materials by teachers through MS Word 's environment of macros and forms.

By following a simple 5-step process we wish to show how any teacher - having no programming skills - can develop pupils' exercises electronically through: 1) materials selection 2) opening the forms toolbar 3) replacing text with text forms or drop-down menus 4) locking, and 5) saving templates. We wish to demonstrate how using the Word 2003 and 2007

environments, fill-in-the blanks, multiple choice or True/False items can be created within minutes using even only the forms.

Procedure

The basic tool to use is a form that you need to complete. The form is the document you will create that will contain fill-in-the-blanks, multiple choice or True/False items (called form fields) in which you enter information for the user to view and complete in Microsoft Word. Thus the form contains options for the user to select. Let us take an example: supposing after reading a short selection the teacher has some multiple choice questions after the reading. A question(s) may be:

1. What is the name of the Portuguese captain whose ship landed on the Gold Coast in 1482? A) Pedro de Escobar B) Johan de Santaram C) Don Diego de Azambuja

2. The Portuguese exploratory activities in the 15th and 16th century were undertaken under the auspices of which Prince? A) King John II B) King John III C) Henry the Navigator

Instead of writing three choices for the students to select or mark on paper, the teacher inserts a drop-down form. By selecting such a form on the computer screen, the student will see a drop-down box containing all the options. They will then select the correct answer and move on to the next question. In this sense, forms take the place of all the major question formats like fill-in-the-blanks, multiple choice, true-false and etc.

Designing in Word 2003

Designing in MSWord 2003 is very easy. The steps are as follows:

1.   Open MS Word and select the materials you will use.
2.   Select **View** from the menu bar.
3.   Select **Toolbars.**
4.   Check the **Forms** toolbar from the pull down menu
5.   Press **OK**. The **Forms Toolbar** will appear like this:
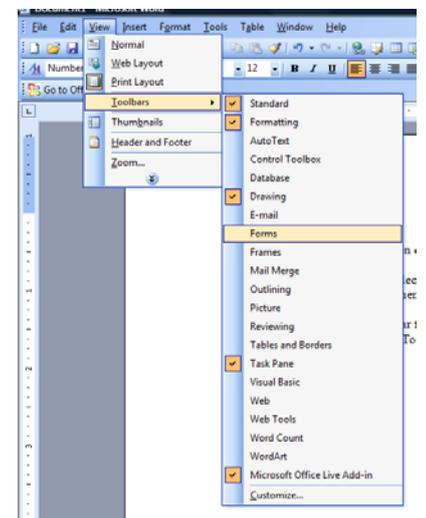
Supposing these are the materials to be designed:

What is the correct PLURAL of the word?
Click the answer button below to see the correct answer.

1.   Five _____ opened a computer services company.
2.   My _____ are sensitive to the cold.

Match the tag questions on the right with the sentence on the left.
Write your choices in the boxes on the left.

3.   You can't answer all the questions.
4.   You will help me do the dishes.

| a). will you? |
| b). can you? |
| c). won't you? |

Is the sentence correct or incorrect for subject and verb agreement?

Make a choice by clicking on the button.

5.   John, as well as his younger brothers, is going to study at that school.
            Correct

            Incorrect

6.   Everyone need to be loved.
        Correct

        Incorrect

Select the correct answer for reported speech.

7.   Amina: "I have been to Egypt."
        Kofi: "Amina said (that) she ___ to Egypt."
        a. had been
        b. has been
        c. was being

8.   Esi: "I have had three cars."
        Jojo: "Esi said (that) she ___ three cars.
        a. has
        b. has had
        c. had had

PROCEDURE

Fill-In-The-Blanks (Use A Text Form)

Note that Questions 1 and 2 are **Fill-in-the –blank** items so we use the **Text** form.

1. For question 1: Five _____ opened a computer services company. ; select the **blank space** and press the **Text** button. The underline will be replaced with a gray area.

2. Double-click in the gray area to open the **Text Form Field Options** box.
3. In the **Default text** box input an indicator word such as "NAME´ or "VERB" all in capital letters. In this example, type "WOMAN" as the default text.
4. Then press **OK**.
5. Follow the same procedure for Question 2: In the Default text box, this time input the word TOOTH.

6. Then press **OK**.
7. Your work will look like this:
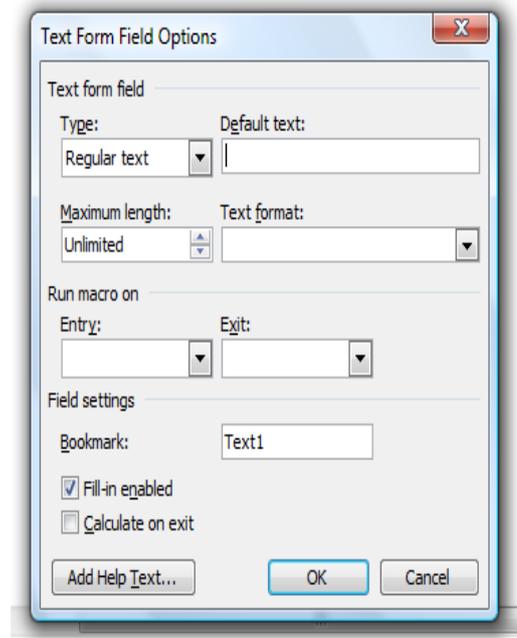
1.   Five WOMAN opened a computer services company.

2.   My TOOTH are sensitive to the cold.

To Fill-in-the-blank, all that the pupil needs to do is to **click in the gray area** and **type the correct word** form or **plural** in this case.

8. Continue to add forms to replace the items pupils will need to select or fill in.
9. After you have finished adding all the forms necessary, **lock the form.**

10. Lock the form by **clicking** on or **pressing the lock button** on the Forms toolbar. (The text cannot be modified after the document is locked).
11. Then select **File, Save As** from the pull down menu.
12. Change the **"Save as Type" to "Template"** (or **"Document Template"**)
13. Name the file.
14. Press **OK.**
15. To test the document, close it and open it again as follows:
    a)   Open M S Word
    b)   Select **File, New** from the pull down menu, and
    c)   Select the template
    d)   Begin to answer the questions

If it is the learner, he/she can print it out for you, the teacher, to correct.

The finished **Fill-in-the-blanks** work will look like this:

1.   Five women opened a computer services company.

2.   My teeth are sensitive to the cold.

Selecting from Alternatives (Use Dropdown Forms)

For Questions 3 and 4 we will need to use a dropdown form.

3. You can't answer all the questions.
4. You will help me do the dishes.

> a). will you?
>
> b). can you?
>
> c). won't you?

Procedure

1. Place an underscore after the questions, like this:

3. You can't answer all the questions.   ____
4. You will help me do the dishes.   ____

2. **Select the underscore** for question three and click on the **Drop-Down Form Field.**
3. The underscore will be replaced with a **gray area**, like this:

3.   You can't answer all the questions.   [   ]

4.   You will help me do the dishes.   ___

4. Double-click on the gray area to open the **Drop-Down Form Field Options** box.
5. Add the answer and distractors in the **Drop-down item** box : type in a) will you?
6. Click **Add** to move it into the **Items In Drop-down list:** Add the remaining the options in the same way.
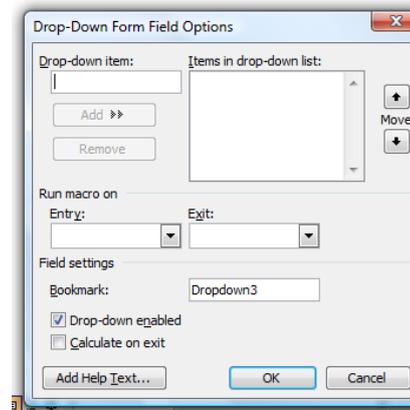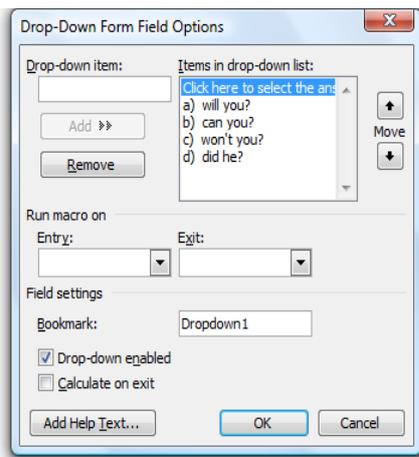
7. Finally add an instruction e.g. **Click here to select the answer**. Highlight it and move it up so that it becomes the first option.

8. Click **OK** and close.
9. Follow the same procedure for Question 4.
10. Your work will look like this:
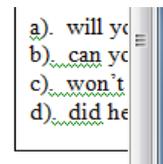
11. Lock the form by **clicking** on or **pressing the lock button** on the Forms toolbar. (The text cannot be modified after the document is locked).
12. Then select **File, Save As** from the pull down menu.
13. Change the **"Save as Type" to "Template"** (or **"Document Template"**)
14. Name the file.
15. Press **OK.**

When the learner clicks on the Question 3, a drop-down menu will appear for him to select answers, like this:

3. You can't answer all the questions.   b) can you?
4. You will help me do the dishes.   c) won't you? ±

Click here to select the answer
a) will you?
b) can you?
c) won't you?
d) did he?

a). will you?
b). can you?
c). won't you?
d). did he?

And final answers like this:

3. You can't answer all the questions.   b) can you?
4. You will help me do the dishes.   c) won't you?

a). will yo
b). can yc
c). won't
d). did he

True or False? Use Check boxes

5. John, as well as his younger brothers, is going to study at that school.
        Correct

        Incorrect

6. Everyone need to be loved.
        Correct

        Incorrect

Questions 5 and 6 will need check boxes as follows:

1. Place your cursor just before **Correct** and **click once**; then **click the Check Box Form Field** and hit **space** thrice.
2. Then place your cursor just before **Incorrec**t and **click once**; then **click the Check Box Form Field** and hit **space** thrice.
3. Your work will look like this:

1.   John, as well as his younger brothers, is going to study at that school.
   ☐ Correct
   ☐ Incorrect

2.   Everyone need to be loved.
   ☐ Correct
   ☐ Incorrect

After locking and saving as explained above, your final work will look like this:

1. John, as well as his younger brothers, is going to study at that school.
   ☒ Correct
   ☐ Incorrect

2. Everyone need to be loved.
   ☐ Correct
   ☒ Incorrect

A Note of Caution

The teacher should make sure that the Forms toolbar is closed and therefore invisible else a learner could unlock the form and mess up with the text.

CREATING A BASIC FORM IN WORD 2007

If you follow these steps, you can add form fields (Content Controls) to your Word document. The final document can be saved and printed (or emailed)

First, if you do not see a **Developer** tab, you must turn it on. Go to **Office button, Word Options,** and click the **Popular** category in the left pane, then check **Show Developer Tab in the Ribbon**
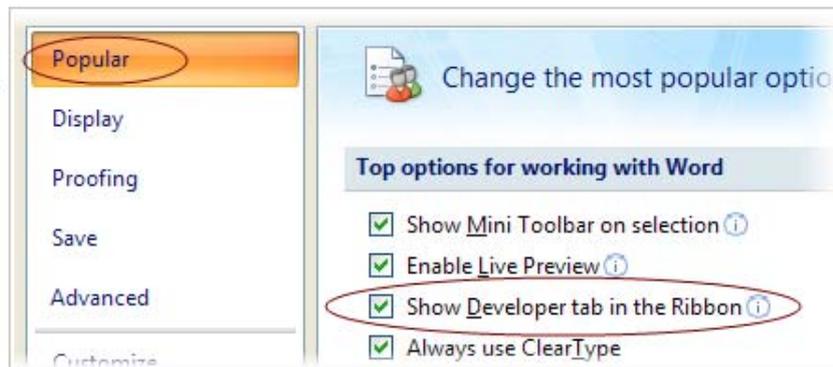
Go to Office button, Word Options, click Popular and check Show Developer Tab in the Ribbon to see the Developer tab.
(Credit: Microsoft)

Create the Document

1.   Start with a new Word document

2.   Save it as a template: **Office button, Save As, Word Template.**

3.   Go to the **Home** tab, **Styles, Change Styles, Style Set**, click on **Word 2007**. This will automatically add paragraph spacing to the document.

Creating Fill-in-the-Blanks (Use Rich Text)

Let us suppose that you have the following for pupils' exercise in class:

1. The name of the religion that Akhenaton founded was called _____.
   (Atonism)

2. A traditional attribute that talks about God as one who gives satisfaction is
   _____ . (Nyame)

3. According to the Akan creation story, God created _____ to protect
   mankind? (abosom)

Procedure:

1. Start with a new Word document
2. Save it as a template: **Office button, Save As, Word Template.**

3. Go to the **Home** tab, **Styles, Change Styles, Style Set**, click on **Word 2007**. This will
   automatically add paragraph spacing to the document.

4. Type : **Class Exercise** for heading.

5. Type: **The name of the religion that Akhenaton founded was:,** then Enter once

6. Type: **A traditional attribute that talks about God as one who gives satisfaction is:,**
   then space once, Enter once

7. Type in Question 3, then space once, Enter once

8. **Save** your template.

Adding the Form Fields (Content Controls)

In the steps following, you will insert all the Content Controls. You will format them in the next
set of steps.

1. Move your cursor to the end of Question 1**:The name of…..founded was:** line. (Click
   anywhere in the line, push the End key to go to the very end, to the right of the colon and
   space you typed in earlier.)

2. Click the **Developer** tab, and in the **Controls** group,
   click **Rich Text.** The Question 1: field is done for
   now.

3. Move your cursor to the end of the Question 2 **A
   traditional attribute …gives satisfaction**: line. In
   the **Developer** tab, **Controls** group, click **Rich Text.**

4. Move your cursor to the end of **created** in Question 3. **According to the Akan creation story, God created _____ to protect mankind** line. In the **Developer** tab, **Controls** group, click **Rich Text.** Delete the underline.
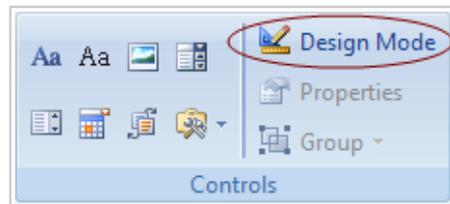
5. **Save** your template.

What you have done so far will look like this:

1. The name of the religion that Akhenaton founded was called: Click here to enter text.
2. A traditional attribute that talks about God as one who gives satisfaction is:Click here to enter text.
3. According to the Akan creation story, God created Click here to enter text. to protect mankind.

Format and Customise (Design Mode)

To change the default text in each Content Control:

1. In the **Developer** tab, **Controls** group, click **Design Mode**.

Your work will then look like this:

1. The name of the religion that Akhenaton founded was called: Click here to enter text.
2. A traditional attribute that talks about God as one who gives satisfaction is: Click here to enter text.
3. According to the Akan creation story, God created Click here to enter text. to protect mankind.

2. Click and edit the text in each Content Control
3. For **Question 1:** change: Click here to enter text. to : **Click here to enter answer.** Double-click on the word text, type answer.
4. For **Question 2:** change: Click here to enter text. to : **Click here to enter answer.** Double-click on the word text, type answer.

Last Step: Protect the Document

1. On the **Developer** tab, in the **Protect** group, click **Protect Document.** This opens a **Restrictions pane** on the right side of the Word window.
   Either a **Formatting** or **Editing** restriction needs to be applied in order to protect the document.
2. Under **Editing restrictions**, check **Allow only…** then choose **Filling in forms** from the list.
3. Click **Yes, Start Enforcing Protection.**
4. You will be prompted for a password. (If you forget the password, you will not be able to edit the original document)
5. Save and close the file.

Test the Form

1. Open a file from your Test Exercise template. You should not see Test Exercise as the file name in the title bar at the top of the Word screen, it should show Document 1.
2. Try filling in the blanks, using the date picker, the check boxes and combo box.
3. To edit the original form, open the template file. In the **Developer** tab, click **Protect Document**, at the bottom of the **Restrict Formatting….** pane and click **Stop Protection.** Now you can edit the template. Once it is edited, turn on the protection again and Save again.

Troubleshooting

1. If the **Content Controls** are not working, check to see if you saved the original file as a template.
2. If the check boxes are not working, go back to the original template and verify that in the **Protect Document** pane, **Filling in Forms** is checked in the **Editing Restrictions.**

In a real classroom situation, teacher exercises or tests hardly consist of only one mode like Text entry or Fill-in-the-blanks. The pupil has to provide factual dates, select either True/False, indicate gender or select from alternative answers. Let us see how these can be done with Forms in MS Word.

We begin all over by first creating a document.

Create the Document

1. Start with a new Word document
2. Save it as a template: **Office button, Save As, Word Template.**

3. Go to the **Home** tab, **Styles, Change Styles, Style Set**, click on **Word 2007**. This will automatically add paragraph spacing to the document.

Supposing the pupils exercise is as follows:

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1. On which date did President Obama visit the Cape Coast Castle? (July 11, 2009)
2. The first coup in Ghana occurred on which date? (February 24, 1966)
3. John, as well as his younger brothers, is going to study at school. True or False?
4. Everyone need to be loved. True or False?
5. I plan to write him a letter ____.
   a. by hand
   b. on the other hand
   c. at hand
6. The soccer fans got quite ____ during yesterday's match.
   a. off-hand
   b. out of hand
   c. at hand

Add the Form Fields (Content Controls)

Questions 1 and 2 deal with dates so you need to use the **Date Picker.**

1. Move your cursor to the end of: **On which date did President Obama visit the Cape Coast Castle?:** line. In the **Developer** tab, **Controls** group, click **Date Picker.**
2. Move your cursor to the end of: **The first coup in Ghana occurred on which date? :** line. In the **Developer** tab, **Controls** group, click **Date Picker.**

The next two items deal with True / False questions so we go to **Legacy Forms** and use the **Checkbox.**

3. Move your cursor to just after **True:** but stay on the **True:** side of the tab you typed earlier for question 3. In the **Developer** tab, **Controls** group, click **Legacy Forms,** then click **Check Box**. Push the End key to move the cursor to the right of **False:** then click the **Check Box** again.
4. For item 4, move your cursor to just after **True:** but stay on the **True:** side of the tab you typed

earlier for question 4. In the **Developer** tab, **Controls** group, click **Legacy Forms,** then click **Check Box**. Push the End key to move the cursor to the right of **False:** then click the **Check Box** again.

Items 5 and 6 involve selecting from alternative answers, so we will use the **Combo Box**

5. Move your cursor to the end of the **I plan to write him a letter ___.** line. Delete the underscore or line. In the **Developer** tab, **Controls** group, click **Combo Box.**
6. For item 6, **The soccer fans got quite ___ during yesterday's match.** move your cursor to the end of quite. Delete the underscore. In the **Developer** tab, **Controls** group, click **Combo Box.**
7. Now **Save** your template.
   Your work will look like this:

---

1. On which date did President Obama visit the Cape Coast Castle? Click here to enter a date.
2. The first coup in Ghana occurred on which date? Click here to enter a date.
3. John, as well as his younger brothers, is going to study at school. True or False?   True ☐   False ☐
4. Everyone need to be loved. True or False? True ☐   False ☐
5. I plan to write him a letter   Choose an item.
   a. by hand
   b. on the other hand
   c. at hand
6. The soccer fans got quite Choose an item.   during yesterday's match.
   a. off-hand
   b. out of hand
   c. at hand

Format and Customise

To do this, change the default text in each Content Control:

1. In the **Developer** tab, **Controls** group, click **Design Mode.**
2. Click and edit the text in each Content Control.
3. For Item 1, change: **Click here to enter a date** to**: Click down arrow to select a date.**
4. For Item 2, change: **Click here to enter a date** to**: Click down arrow to select a date.**
5. We will skip Items 3 and 4 since the student will merely click on either **True** or **False** to selection an option.
6. For Item 5: **I plan to write him a letter** Choose an item.
   Change **Choose an item** to **Click down arrow to select one item.**

7. For Item 6: The soccer fans got quite Choose an item. **during yesterday's match : c**hange **Choose an item** to **Click down arrow to select one item.**

Your work will look like this:

1. On which date did President Obama visit the Cape Coast Castle? (Click here to enter a date.)
2. The first coup in Ghana occurred on which date? (Click here to enter a date.)
3. John, as well as his younger brothers, is going to study at school. True or False?
   True ☐   False ☐
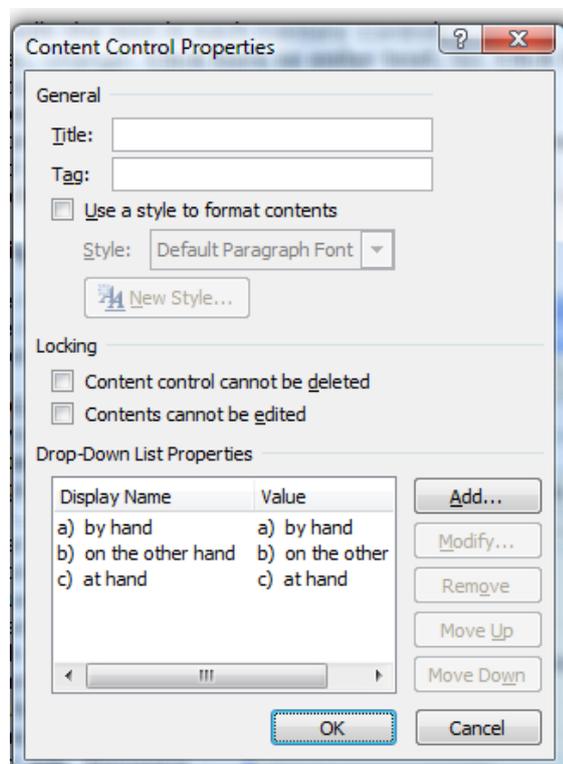4. Everyone need to be loved. True or False? True ☐   False ☐
5. I plan to write him a letter   (Click the arrow and select one item)
   a. by hand
   b. on the other hand
   c. at hand
6. The soccer fans got quite (Click the arrow and select one item)   during yesterday's match.
   a. off-hand
   b. out of hand
   c. at hand

8. Click **Design Mode** to turn it off.

Customising the Combo Box: next, you will add the items that make up the list in the Combo Box.

1. Click the **Combo Box** by Item 5: **I plan to write him a letter**, then click **Properties** in the **Control** group.
2. Click **Add…,** then type a) by hand for **Display Name.** Do not enter anything under value (because it will show the Display Name you type in). Finish with **OK.** (Push Enter for OK, immediately push Enter for Add…)
3. Repeat the steps to add b) on the other hand and c) at hand.
4. Select Pick an item, choose

Content Control Properties

General

Title:

Tag:

☐ Use a style to format contents

Style: Default Paragraph Font ▾

New Style…

Locking

☐ Content control cannot be deleted
☐ Contents cannot be edited

Drop-Down List Properties

Display Name	Value
a) by hand	a) by hand
b) on the other hand	b) on the other
c) at hand	c) at hand

Add...
Modify...
Remove
Move Up
Move Down

OK   Cancel

Remove

5. OK to finish.
6. Follow the same process for Item 6 as done for item 5.
7. OK to finish.
8. Save

Last Step: Protect the Document

1. On the **Developer** tab, in the **Protect** group, click **Protect Document.** This opens a **Restrictions pane** on the right side of the Word window.
   Either a **Formatting** or **Editing** restriction needs to be applied in order to protect the document.
2. Under **Editing restrictions**, check **Allow only…** then choose **Filling in forms** from the list.
3. Click **Yes, Start Enforcing Protection.**
4. You will be prompted for a password. (If you forget the password, you will not be able to edit the original document)
5. Save and close the file.

Test the Form

1. Open a file from your Test Exercise template. You should not see Test Exercise as the file name in the title bar at the top of the Word screen, it should show Document 1.
2. Try filling in the blanks, using the date picker, the check boxes and combo box.
3. To edit the original form, open the template file. In the **Developer** tab, click **Protect Document**, at the bottom of the **Restrict Formatting….** pane and click **Stop Protection.** Now you can edit the template. Once it is edited, turn on the protection again and Save again.

Troubleshooting

1. If the **Content Controls** are not working, check to see if you saved the original file as a template.
2. If the check boxes are not working, go back to the original template and verify that in the **Protect Document** pane, **Filling in Forms** is checked in the **Editing Restrictions.**

Apewosika Primary School

Name: Joseph Peter Brown

Class: Primary 6   **Date:** 11th July, 2009

Class Exercise

Instruction: Answer all the questions.

1. On which date did President Obama visit the Cape Coast Castle? 7/11/2009
2. The first coup in Ghana occurred on which date? 2/24/1966
3. John, as well as his younger brothers, is going to study at school. True or False?
   True ☒   False ☐
4. Everyone need to be loved. True or False? True ☐   False ☒
5. I plan to write him a letter a) by hand
6. The soccer fans got quite b) out of hand   during yesterday's match.

CONCLUSION

By using MS Words' tools therefore, no further sophisticated software, programming knowledge or extra cost is necessary. Knowing where the forms are located on the toolbars and how to use them are the skills the teacher requires for creating interactive materials for learners' use.

It is through processes such as these that the new teacher will develop talent and knowledge in meeting learner needs through creation of specific exercises; learners can now easily access lesson templates any time by merely opening into MS Word, selecting File, New from the pull-down menu and begin reading and answering questions by either clicking or typing in text. These can be printed and handed in for correction or even auto-corrected by creating macros.

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