

PERCEPTIONS AND APPROPRIATION OF COURSEWARE BY SCIENCE TEACHERS IN THE PILOT SECONDARY SCHOOLS OF KISANGANI (DRC): BETWEEN PERCEIVED USEFULNESS AND LOW PEDAGOGICAL USE

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<https://doi.org/10.37602/IJREHC.2026.7522>

ABSTRACT

This study focuses on analyzing science teachers' perceptions and appropriation of educational software in pilot secondary schools in Kisangani, Democratic Republic of the Congo, with particular attention to the gap between perceived pedagogical usefulness and the actual use of these tools. These schools benefited from several interventions related to science curricula, the renovation or modernization of laboratories, the provision of teaching kits, and teacher training. Despite these initiatives, teaching practices remain largely traditional, with a strong emphasis on the transmission and memorization of content. The study adopted a mixed-methods descriptive and analytical approach involving a population of 102 respondents from six pilot secondary schools in the Tshopo 1 Educational Province. Data were collected through questionnaires administered to teachers and semi-structured interviews conducted with school and pedagogical officials. Data analysis was carried out using SPSS, complemented by statistical tests. The findings show that the gap between perceived usefulness and effective appropriation is substantial. A favorable perception appears to be a facilitating condition, but it is not sufficient to ensure the actual use of educational software. Effective pedagogical use therefore requires techno-pedagogical training, contextualized resources, technical support, and regular institutional monitoring.

Keywords: Educational software, appropriation, perception, teacher, pedagogical integration.

1.0 INTRODUCTION

There is no need to recall that, in secondary science education, courseware has the advantage of allowing the visualization, simulation, manipulation and experimentation of situations that would otherwise be difficult to reproduce in the classroom. In the Democratic Republic of Congo, the reform of basic education has sought to renew school curricula, promote the Situational Approach and improve the conditions for teaching science. In the context of Kisangani, these tools are seen as instruments that can make scientific learning more concrete, interactive and student-centred.

Indeed, for the appropriation and use of courseware by science teachers in secondary schools in Kisangani, the Technology Acceptance Model (TAM) and the TPACK model offer two complementary frameworks. The TAM shows that the adoption of a technology depends in particular on its perceived usefulness and perceived ease of use (Davis, 1989). The work of

Scherer, Siddiq and Tondeur (2019) as well as Scherer and Teo (2019) confirm that these perceptions influence teachers' intention and certain usage behaviors, without however guaranteeing effective integration. This perspective is particularly relevant for our article, where teachers can recognize the pedagogical value of courseware while using it little in their practices.

The TPACK model completes this reading by emphasizing that the pedagogical use of a digital tool is not based solely on its technical knowledge, but on the articulation between technological, pedagogical and disciplinary knowledge (Mishra & Koehler, 2006). The recent work of Schmid et al. (2024) and Claro et al. (2024) reinforces this idea by showing that digital teacher skills are contextualized and that they should not only allow tools to be used, but also to be integrated into planning, teaching and learning activities. In our study, the appropriation of courseware can therefore be understood as the shift from their knowledge and perceived usefulness to a contextualized pedagogical integration, made possible by training and technological skills.

As a result, in the Tshopo 1 Educational Province, six secondary schools in Kisangani participated in the experimentation of this reform: Maele College, the Lisanga Institute, the Lubunga Institute, the Kisangani Scientific Institute, the Saïo Institute and the Mont Kitenge/IFCEPS Institute. In particular, they benefited from actions relating to scientific programs, the renovation or modernization of laboratories, educational kits and training. Despite these interventions, initial observations report the persistence of essentially traditional practices, largely focused on the transmission and memorization of content.

However, the availability of a technology is not enough to produce its pedagogical integration. UNESCO's Global Education Monitoring Report on technologies emphasizes that their educational value depends in particular on their relevance, access conditions, teachers' skills, support and institutional context. It also draws attention to the lack of robust data on the added value of certain educational technologies and recommends that their adoption be subordinated to learning objectives rather than to a technocentric logic (UNESCO, 2023). On this, the question of teachers is central.

The same report notes that insufficient infrastructure, lack of equipment, training deficits and lack of trust can prevent teachers from effectively integrating digital technology into their practices. In the case of this study, it is therefore necessary to rely on the perception and appropriation of courseware, in turn, the perceived usefulness and the actual pedagogical use. Therefore, the main question is formulated as follows:

- To what extent do DAS teachers' favourable perceptions of courseware translate into their appropriation and effective pedagogical use in the pilot secondary schools in Kisangani?
- Three specific questions arise:
 - how do DAS teachers in the pilot secondary schools in Kisangani perceive the pedagogical usefulness of courseware?
 - What is the effective level of appropriation and use of the courseware by DAS teachers in the pilot secondary schools in Kisangani?
 - What factors explain the gap between the perceived usefulness and the low pedagogical use of courseware by DAS teachers in the pilot secondary schools in Kisangani?

The general objective is to analyze the perceptions and appropriation of the courseware by DAS teachers in the pilot secondary schools of Kisangani.

More specifically, it is (d'):

- Describe the pedagogical benefits attributed to the courseware by DAS teachers in the pilot secondary schools in Kisangani;
- Assess the level of knowledge, training and use of courseware by DAS teachers in pilot secondary schools in Kisangani;
- Identify the obstacles to their appropriation and examine the associations between knowledge, training, perception and effective use of DAS teachers in the pilot secondary schools in Kisangani.

2.0 RESEARCH METHODOLOGY

The study adopted a mixed design with a descriptive and analytical aim, combining a main quantitative component and a complementary qualitative component. Mixed research makes it possible to combine quantitative and qualitative data in order to improve the understanding of a complex phenomenon (Johnson & Onwuegbuzie, 2004).

In this research, the quantitative dimension aimed to measure knowledge, uses, training, perceptions and declared barriers, while qualitative data from interviews, observations and literature review were used to contextualize and triangulate the results. The source document explicitly justifies the use of the mixed approach by the need to identify the causes of non-use and to understand teachers' actual perceptions and practices.

The study was conducted in the six pilot secondary schools of the Tshopo 1 Educational Province located in the city of Kisangani. The institutional criteria that led to the choice of these schools included the availability of modern laboratories, the existence of certain techno-pedagogical devices, access to electricity, the presence of teachers trained in the Situational Approach and the existence of documents relating to the reform.

The target population was made up of teachers in the Science Learning Domain. The accessible population included teachers from the following three sub-fields: mathematics; life and earth sciences; physical sciences, technology and ICT. It had 102 teachers. The entire accessible finite population was retained. It is therefore an exhaustive survey of the entire study population.

Table 1: Socio-demographic characteristics of participants

Variable	Workforce (n)	Percentage (%)
Gender		
Female	8	7,8
Male	94	92,2
Age		
18–28 years	12	11,8
29–39 years	45	44,1
40–50 years	34	33,3

Over 50 years	11	10,8
Total	102	100,0

Source: Survey data.

The gender distribution shows a strong male predominance, with 94 teachers, or 92.2%, compared to a very low proportion of women. In terms of age, the 29–39 age group is the most represented, with 45 teachers, or 44.1%.

As part of this research, four complementary collection methods were used: questionnaire, interview, observation and literature review. Participants were contacted to obtain their consent to participate in the study. The questionnaire also explicitly stated that the anonymity of respondents would be guaranteed.

The questionnaire for teachers consisted of 14 questions organized into thematic themes: six questions on teachers' perceptions and eight questions on teachers' appropriation of courseware. Thirteen individual semi-structured interviews were conducted with officials including school principals, focal points and educational inspectors. Observations were also made on classrooms, science laboratories, computer rooms and teachers' spaces in order to compare the statements with the actual conditions of use. Finally, nearly 40 institutional and pedagogical documents were examined, including official texts, curricula, training modules, preparation sheets and documents relating to the integration of ICTs.

At the end of the field visit, 102 items were considered to be an irrefutable empirical basis for this research. Data were entered into Microsoft Excel 2016 and exported to IBM SPSS Statistics version 25 for cleansing, descriptive analysis and inferential analyses. Descriptive analyses included numbers and percentages. The Pearson Chi-square test was used to study associations between categorical variables. The significance threshold was set at $\alpha = 0.05$. A $p\text{-value} < 0.05$ was considered statistically significant or the opposite.

3.0 SEARCH RESULTS

The results of this research are presented in four dimensions relating to the perception and appropriation of courseware, including the knowledge-training-use of courseware, perception of pedagogical benefits, perception of achievement of objectives and obstacles to appropriation.

3.1 Knowledge, training and use of courseware

Table 2: Teachers' knowledge, training and use of courseware

Variables	Terms and conditions	Workforce (n)	Percentage (%)
Knowledge of Courseware	No	72	70,6
	Yes	30	29,4
Training in the use of courseware	No	72	70,6
	Yes	30	29,4
	No	79	77,5

Use of Courseware in the Classroom	Yes	23	22,5
Total number of respondents		102	100,0

Source: Survey data.

Knowledge and use of courseware appears to be low. Of the 102 teachers, 72 (70.6%) say they are not familiar with courseware, compared to 30 (29.4%) who say they are aware of them. Regarding use, 79 teachers (77.5%) say they do not use courseware during their teaching, compared to only 23 (22.5%) who say they use them. The training has a similar distribution: 72 teachers, or 70.6%, have not received any specific training on courseware, compared to 30 (29.4%) who say they have benefited from training or self-training. These results indicate that effective appropriation remains limited even before examining perceptions.

3.2 Perception of pedagogical benefits

Table 3: Perceptions of the pedagogical benefits of courseware

Rated dimensions	Agree n (%)	Disagree n (%)
Student motivation	7 (6,9)	95 (93,1)
Student Effectiveness	30 (29,4)	72 (70,6)
Learner empowerment	69 (67,6)	33 (32,4)
Appropriation of learning	43 (42,2)	59 (57,8)
Revelation of the student's potential	18 (17,6)	84 (82,4)
Innovation and creativity in learning	26 (25,5)	76 (74,5)

Source: Survey data.

Learners' empowerment is the most frequently recognized benefit, with 67.6% of favorable opinions. The appropriation of learning comes next with 42.2%. Conversely, only 29.4% recognize an effect on student efficiency, 25.5% on innovation and creativity, 17.6% on the revelation of learners' potential and 6.9% on their motivation. Perceptions therefore appear to be highly differentiated according to the pedagogical dimension examined.

3.3 Perception of Achievement of Objectives

Table 4: Distribution of teachers according to their perception of the contribution of courseware to the achievement of teaching objectives

Teachers' opinion	Workforce (n)	Percentage (%)
Yes	91	89,2
Not	11	10,8
Total	102	100,0

Source: Survey data.

In total, 91 out of 102 teachers, or 89.2%, believe that the use of courseware can facilitate the achievement of teaching objectives, compared with 11, or 10.8%, who express a contrary opinion. There is thus an important distinction between the recognition of an overall pedagogical usefulness and the evaluation of certain specific pedagogical effects.

3.4 Barriers to ownership

Table 5: Reported Barriers to Appropriation and Use of Courseware

Obstacles	Agree n (%)	Disagree n (%)
Lack of teacher training	70 (68,6)	32 (31,4)
Lack of technical support	68 (66,7)	34 (33,3)
No tutorials	62 (60,8)	40 (39,2)
Poor implementation policy	52 (51,0)	50 (49,0)
Lack of motivation among teachers	50 (49,0)	52 (51,0)
Lack of support and encouragement	49 (48,0)	53 (52,0)
Unavailability of electricity	38 (37,3)	64 (62,7)
Courseware/curriculum mismatch	18 (17,6)	84 (82,4)

Source: Survey data

The lack of training is the most frequently identified constraint (68.6%), followed by the lack of technical support (66.7%) and the non-existence of available courseware (60.8%). However, another set of items shows that 52.0% of participants believe that some digital content is poorly adapted to the school curriculum, 48.0% mention the lack of skills in courseware and 40.2% the lack of conviction in ICT. These two sets of items relate to different dimensions and should therefore not be merged: the first concerns the causes of disinterest or non-use, the second the negative perceptions associated with resources and their integration.

3.5 Statistical Tests

Table 6: Associations between knowledge, training, perception and use

Relationship tested	χ^2_{cal} by Pearson	DDL	p	Statistical conclusion
Knowledge $\times$ Use	6,476	1	0,011	Significant association
Training $\times$ Use	71,271	1	< 0.001	Highly significant association
Use $\times$ Achievement of objectives	0,135	1	0,714	Non-significant association

The Chi-square test results highlight differentiated relationships between the variables studied. Awareness of courseware is significantly associated with their use, $\chi^2(1) = 6.476$; $p = 0.011$, which indicates that teachers who are familiar with these tools are more likely to use them in their teaching practices. However, the intensity of this relationship remains much lower than that observed for training.

Indeed, training in the use of courseware has a particularly strong association with their use, $\chi^2(1) = 71.271$; $p < 0.001$. This result suggests that mere knowledge of the existence or functionalities of courseware is not enough to promote their effective integration in the classroom. The acquisition of practical and techno-pedagogical skills through training thus appears to be a determining factor in their appropriation and pedagogical use.

On the other hand, no statistically significant association is observed between the reported use of courseware and the perception of the achievement of the pedagogical objectives, $\chi^2(1) = 0.135$; $p = 0.714$. This result means that, in the sample studied, the use of courseware does not make it possible to statistically distinguish teachers according to their assessment of the achievement of teaching objectives. It is therefore neither a proof of the ineffectiveness of courseware nor an indication of a negative perception of these tools.

Overall, these results show that the adoption of courseware seems to be more related to the conditions of teachers' preparation, particularly for training, than to the perception of their pedagogical effects. They thus support the idea that the transition from perceived usefulness to effective use depends on appropriation mechanisms based on skills, training and techno-pedagogical support.

4.0 DISCUSSION OF THE RESULTS

The discussion in this article will be based on the following points: the central paradox: high perceived usefulness and low use, the use and appropriation of courseware, training as the most powerful lever, favorable and non-homogeneous perception, the weight of institutional conditions, and finally, the contextualization of courseware.

4.1 The central paradox: high perceived utility and low use

The main result of this research is the contrast between the perception of usefulness and the behaviour of use. While 89.2% of teachers consider that courseware can contribute to the achievement of teaching objectives, only 22.5% say they actually use them. In other words:



This configuration partially confirms the predictions of the TAM. Perceived usefulness is an important variable in technological acceptance (Davis, 1989), but it does not necessarily produce use when confronted with significant constraints. The quantitative syntheses of Scherer et al. (2019) and Scherer and Teo (2019) show that the TAM usefully explains the intention and adoption of technologies among teachers, but that the importance of the relationships between variables varies according to the context.

The case of the pilot schools in Kisangani particularly illustrates this limitation: the teacher can theoretically recognize the value of a technology without having benefited from the necessary conditions to appropriate it.

4.2 To know is not yet to appropriate

70.6% of teachers say they are not familiar with the courseware, and 77.5% do not use them. The statistically significant association between knowledge and use, $\chi^2(1) = 6.476$; $p = 0.011$, confirms that familiarity with the tool facilitates its use. However, it does not allow knowledge to be considered as a sufficient condition. This distinction is important. Appropriation involves more than the identification or elementary manipulation of software. It assumes that the teacher is able to integrate it into the disciplinary content and into a relevant pedagogical strategy.

Mishra and Koehler's (2006) TPACK model makes it possible to interpret this situation: technological knowledge must be articulated with pedagogical and disciplinary knowledge. Schmid et al. (2024) reinforce this reading by showing that TPACK must be considered as a complex, dynamic and context-dependent process. Thus, in science education in Kisangani, knowing how to open or manipulate software does not yet constitute techno-pedagogical appropriation. The teacher must know which software to use for a given situation, how to articulate it to the objectives of the program and how to organize the student's activity around this resource.

4.3 Training appears to be the most powerful lever

The relationship between training and use is one of the most robust results of the study: $\chi^2(1) = 71.271$; $p < 0.001$. The initial study indicates that almost 80% of trained teachers use courseware, while no untrained teachers use them. This result reinforces the idea that the central problem is not only that of attitudes. Training is the mechanism that transforms the positive perception into the competence to act.

This conclusion is consistent with the recent literature on digital teacher competences. Claro et al. (2024) show that teachers' digital competence is multidimensional and that the use of digital technology to plan or transmit content does not sum up the set of skills needed for quality pedagogical integration. UNESCO (2023) also highlights that teachers still face obstacles associated with training and confidence in their ability to integrate technology. In the context studied, training should therefore be resolutely techno-pedagogical, and not just computer science.

Training a DAS teacher should not simply mean teaching him or her how to use a computer. In particular, he or she should be taught to use a physics simulation in a problem situation, to use a digital biology resource to support an observational approach, to build interactive mathematics exercises or to integrate a numerical assessment into a sequence in accordance with the Situational Approach.

4.4 A favourable perception, but not homogeneous

The second important contribution concerns the nature of teacher perception. The data do not allow us to qualify the perception as "positive" or "negative" overall. It is rather ambivalent or contrasted. Admittedly, 89.2% of respondents recognize a possible contribution to the achievement of objectives and 67.6% recognize the potential for learner empowerment. However, only 42.2% recognize an effect on the appropriation of learning, 29.4% on student efficiency, 25.5% on innovation and creativity, and 6.9% on motivation.

This result can be explained in particular by the lack of practical experience of the majority of respondents. It is difficult for a teacher who does not regularly use a tool to empirically assess its effects on motivation, creativity or performance. It is therefore necessary to distinguish between anticipated and experienced usefulness. In this study, part of teachers' perception seems to be based on a theoretical recognition of the potential of digital technology rather than on a prolonged experience of its effects in the classroom.

4.5 The weight of institutional conditions

The lack of training alone does not explain the low use. Respondents also mention the lack of technical support (66.7%), the non-existence of courseware (60.8%), the weaknesses of the implementation policy (51.0%) and the lack of support and encouragement (48.0%). The responsibility for integration cannot therefore be shifted exclusively to the teacher.

UNESCO (2023) recalls that the effective integration of technology presupposes, among other things, conditions of access, skills, support, governance and a match between technology and educational objectives. The problem observed in Kisangani can thus be read as a systemic problem of ownership.

The teacher is the last actor in the chain of integration, but his or her behaviour depends on the conditions offered to him or her by the school, the educational structures, the inspection services and educational policy.

4.6 Contextualize Tutorials

Another piece of data deserves special attention: 52.0% of respondents consider the inadequacy of digital content in school curricula as an element of negative perception. This observation is in line with one of the principles defended in the Global Education Monitoring Report: the choice of technology should be guided by educational needs, relevance and context rather than only by the availability of technological innovation (UNESCO, 2023).

In the context of the DRC, the import of software developed for other education systems does not guarantee their adequacy. Appropriation could be facilitated by courseware: adapted to national curricula; structured in accordance with the Situational Approach; usable offline when necessary; adapted to the material capacities of the institutions; accompanied by pedagogical guides for teachers; and built from teaching situations from local realities. This requirement is one of the major implications of the research. The results make it possible to propose a simple interpretive chain:



This chain is itself influenced by a facilitating environment including the availability of courseware, curricular adaptation, equipment, technical support, pedagogical support and institutional follow-up. In this model, favourable perception is the entry point, but not the final result. Appropriation is the essential intermediate variable. Finally, pedagogical use represents the observed behaviour sought.

In view of the above, we formulate the main theoretical result of this research as follows: in the pilot secondary schools of Kisangani, the perceived usefulness of courseware constitutes a favorable but insufficient condition for their use; its transformation into pedagogical practice depends on the mediation of techno-pedagogical skills and the institutional conditions of appropriation.

This research makes three main contributions: first, it documents a context that is still poorly represented in the international literature on the integration of educational technologies: public and subsidized secondary schools in a city in the Democratic Republic of Congo engaged in a reform of scientific education. Second, it shows that the absence of use should not automatically be interpreted as a technological rejection. Finally, it allows us to shift the analysis from acceptance alone to the process of appropriation, by showing the central role of training, contextualization, and institutional support.

5.0 CONCLUSION

The objective of this study was to analyze the perceptions and appropriation of the courseware by teachers of the Science Learning Area in the pilot secondary schools in Kisangani.

The results show a significant contrast between the perceived usefulness of courseware and their actual pedagogical use. Although the majority of teachers recognize that these tools can contribute to the achievement of teaching objectives, their integration into classroom practices remains low. This situation is accompanied by a limited level of knowledge of courseware and a lack of specific training. Thus, the results suggest that the favourable perception of usefulness does not automatically translate into appropriation and effective use. They highlight a gap between perception, appropriation and use, which underlines the central role of training and the development of techno-pedagogical skills in the transition from intention to practice.

Training appears to be a central lever for the appropriation and effective use of courseware. The results suggest that a favourable perception of their usefulness is not enough to ensure their integration into pedagogical practices. The appropriation of these tools therefore requires a broader approach than the simple provision of equipment. It presupposes in particular continuous techno-pedagogical training, the availability of resources adapted to the context and school programmes, local technical support as well as regular institutional monitoring. In other words, the sustainable use of courseware depends on the combination of skills, resources, support and favourable organisational conditions.

In this perspective, the pilot schools should be considered not only as establishments equipped with equipment, but as spaces for the development, experimentation and dissemination of techno-pedagogical practices adapted to science teaching. The results suggest that future interventions should give priority to the techno-pedagogical training of teachers and the design of courseware compatible with the DAS curricula and the Situational Approach.

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ANNEX 1:

SURVEY QUESTIONNAIRE

I. IDENTIFICATION OF THE SURVEY

School name:

Age:

Gender:.....

II. INSTRUCTIONS

Read all the questions carefully and tick the boxes that correspond to your choice. For open-ended questions, you will answer in writing in the spaces provided.

III. ACTUAL QUESTIONS

1. Have you ever heard of tutorials?

Yes ☐ No ☐

If so, where?

Radio ☐ Conference ☐ Education ☐ Internet ☐ Other

2. Do you use the tutorial in your teaching?

Yes ☐ No ☐

3. Have you received training on the use of courseware in teaching:

Yes ☐ No ☐

Details on the training:

No.	Equipment	YES	NO
a.	Initial diploma training		
b.	Continuing education		
c.	Auto formation		

4. What equipment and resources for educational use are available in your school? Place a cross in the corresponding box: (1=Non-existent; 2=Existing).

No.	Equipment	1	2
1	CD/ DVD		
2	USB flash drive		
3	Desktop computer		
4	Laptop		
5	Tablet		
6	Smartphone		
7	Video projector		
8	Tutorial		
9	Word Processing (Word)		
10	Presentation (PowerPoint)		
11	Spreadsheets (Excel)		
12	Exercisers		

5. These different types of equipment can be found in:

a. Classrooms ☐ b. Specialized rooms (Laboratories) ☐

c. Teachers' rooms ☐ d. Others ☐

6. In your opinion, to what extent do the following elements constitute a lack of interest in the use of courseware in science teaching (1. Strongly disagree; 2. Strongly agree).

No.	Selflessness	1	2
a.	Unavailability of electricity		
b.	No tutorial		
c.	Inadequacy of courseware in relation to the content of the Programme/Curriculum		
d.	Lack of motivation among teachers		
e.	Insufficient teacher training in the use of courseware in teaching		
f.	Lack of support and encouragement		
g.	Poor implementation policy		
h.	Lack of technical support		

7. Is the time allotted for learning a lesson in secondary school sufficient to use the tutorial in a didactic sequence?

Yes ☐ No ☐

8. How many hours do you think would be favorable for the use of courseware in teaching?

R/.....

9. Do you have a smart technology tool?

Yes ☐ No ☐

If so, which one?

Computer ☐ Smartphone ☐ Tablet ☐ Other ☐

10. Do you think the use of courseware is suitable for teaching in the Science Learning Area?

Yes ☐ No ☐

11. In your opinion, to what extent do the following elements constitute a positive perception of the use of courseware in science education (1. Strongly disagree; 2. Strongly agree).

No.	Perception positive	1	2
a.	Motivation in the student		
b.	Student Effectiveness		
c.	Learner empowerment		
d.	Students' appropriation of learning		
e.	Revelation of the student's hidden mind		
f.	Innovation and creativity in learning		

12. Does the use of courseware facilitate the achievement of learning objectives in the classroom?

Yes ☐ No ☐

If so, how many percent do you estimate?

50% ☐ 70% ☐ 80% ☐ 90% ☐

13. In your opinion, to what extent do the following elements constitute a negative perception of the use of courseware in science education (1. Strongly disagree; 2. Strongly agree).

No.	Negative perception	1	2
a.	Lack of skills on tutorials		
b.	Lack of conviction in ICT		
c.	Attachment to traditional teaching methods		
d.	Mismatch of digital content with training programs		
e.	Cultural and social factor not taken into account by digitized content		
f.	Certification and the relevance of educational resources		
g.	Poor implementation policy		
h.	Education System Requirements		

14. For regular and systematic use of courseware in secondary school science education, it is sufficient to (1. Strongly disagree; 2. Strongly agree):

No.	Strategies	1	2
a.	Design Courseware for High Schools		
b.	Raising teachers' awareness of the use of courseware		
c.	Reorganize the policy of the management of the reform on APS		

ANNEX 3:

INSPECTOR MAINTENANCE GUIDE

1. What can you tell us about the reform of the APS in the Congolese education system?
2. As things stand, what are the practices on ICT that are current in the field of science within the institutions you supervise?
3. From your analysis of the situation, what are the main obstacles you have identified?
4. What are the medium- and long-term prospects for the generalization of the practice?
5. Is there regular follow-up of the practical activities on the tutorial?

GUIDE TO THE INTERVIEW OF SCHOOL OFFICIALS (PREFECT OF STUDIES)

1. In terms of ICT policy in schools, are you aware of the policies put in place by the State on the use of courseware in the classroom?
2. What can you tell us about the use of courseware in your institution?
3. Today, what are the different practices listed within your establishment?
4. In your opinion, what are the main obstacles to the use of courseware in your institution?

5. What suggestions can you make for better use of courseware in teaching?

CURRICULUM CORRESPONDENTS INTERVIEW GUIDE (ISP/KIS)

1. What is your responsibility for the reform of the APS at secondary level?
2. What can you tell us about the use of courseware in these schools?
3. Today, what are the different practices listed within these secondary schools?
4. In your opinion, what are the main obstacles to the use of courseware in these institutions?
5. What suggestions can you make for better use of courseware in teaching?