Teacher Perceptions of the Use of Moodle to Enhance the Quality of Teaching and Learning in a K-12 Private School in the United Arab Emirates

Naser Sallam and Khadeegha Alzouebi

Hamdan Bin Mohammed Smart University, Dubai, United Arab Emirates

Abstract: This study investigates teacher perceptions of the use of Moodle, a learning management system (LMS) to enhance the quality of teaching and learning in a private school in Al-Ain city in the United Arab Emirates. The study explores teacher perceptions of Moodle as a tool for enhancing learners' motivation and the opportunities it offers teachers to practice differentiated teaching. A qualitative approach was used to collect data from 12 K-12 teachers in one school in Al-Alain in the United Arab Emirates. The teachers, who participated in the study, attended an introductory training before they participated in the study. The results of the study indicate that teachers are very positive about Moodle as a tool for enhancing teaching and learning however there are other important factors that have made the implementation of Moodle a difficult task, which have been discussed in this paper. This study reflects the results of a single case study that will hopefully add to the emerging literature on the use of Moodle in the United Arab Emirates.

1. Introduction

1.1 Study Background

The educational paradigm in the United Arab Emirates (UAE) is characterized by innovative initiatives, evolving technology and competitiveness. E-learning is perhaps the most dominant solution that infuses technology with teaching and learning. Abu Dhabi Educational Council (ADEC) considers e-learning as an 'essential part' (Policy Manual, 2013:p.12) for a successful curriculum delivery. The Policy Manual refers to e-learning as 'Innovative Teaching and Learning'.' (p.12). The current study is an attempt at examining the possible impact of the use of a learning management system (LMS) known as Moodle on teaching and learning, motivational levels and differentiated instruction in a private school located in Al-Ain, in the UAE. We have used a pseudonym name 'Al-Ain Model Private School' to conceal the identity of the children and staff at the school. The first author has been working at Al-Ain Model Private School since 2001 in various capacities but became the school Principal in 2012.

1.2 Educational Technology in the United Arab Emirates

The educational system in the UAE has paid special attention to the advancement of technology and its contributions to education. Macpherson, Kachelhoffer and El Nemr (2007) explain that the impact of information and communication technology was the principle factor for the call for educational reform in the UAE in 2005. Randeree (2008) states that 'the UAE is the leading country in the Middle East in terms of adopting e-learning and web-based education' (p.44). He added that the use of e-learning and web-based portals has 'enabled children to have ever greater proficiency with information technology' (p.41). Pham (2012) emphasized the importance of following the latest trends in education by arguing that 'the ability to adapt teaching practices depends on how well teachers keep informed about educational trends and what they are supposed to do to deal with such changes' (p.7).

E-mail: naser_sallam@hbmsu.ac.ae, k.Alzouebi@hbmsu.ac.ae

1.3 Moodle

Moodle, an acronym for 'Modular Object-Oriented Dynamic Learning Environment' (moodle.org), is a free online learning management system (LMS) that was designed by the Austrian Martin Dougiamas in 2002. It has grown in popularity with 72,166 registered sites in 223 countries (moodle.org) owing to its well organized, secure and user-friendly (Ismail Fayed (2010) interfaces and features. Yaman (2010) explains that: 'Moodle has become one of the most widely used open source learning management platforms on the internet because of the opportunities it offers to the teachers and children '. According to Abar, and Madsen Barbosa (2011) Moodle 'favors collaborative learning, enabling interactions with resources from different media and among all teachers' (p.32). The Moodlers (Moodle.org) can collaboratively learn by using the tools available in the software. In addition the online quizzes are tools which assess learner progress whether in or outside the classrooms with immediate feedback that promotes assessment for learning. Borham and Olmos (2011) describe the various features Moodle offers in terms of on-line quizzes and its grading system:

> Teachers can provide comments, suggestions and even grades in an organized way and save them in the online platform itself, hence more easily managing the children's records; and finally, both teachers and children find the means to provide extensive feedback and engage in a constant dialogue with each other (p.381).

Perhaps Ismail Fayed's (2010) case study titled 'Moodle as a Supporting VLE in ESL Secondary Education' is one of the most important studies that have explored the implementation of Moodle in schools in the United Arab Emirates. Fayed presented the cast study during the 3rd Annual Forum on e-learning Excellence Bringing Global Quality to a local Context which was hosted by Hamdan Bin Mohamed Smart University in Dubai. As a teacher of English in the Institute of Applied Technology in Dubai, he taught two groups of grade 12 boys. Fayed described the pupils as regularly being absent from the institute due to the lack of enthusiasm and interest in school. The boy's abilities in English and ICT were generally poor. He introduced Moodle as a virtual learning environment (VLE) to support a blended learning approach which he used to motivate the children. Fayed described Moodle as 'well-organized, fast growing, secure, and user-friendly' (p.7). He also described the discussion forums (a Moodle tool), as being 'encouraging and of interest to most children (p.9). His study found Moodle to be an effective strategy for motivating children and helping those who were also absent as they could still access the teaching and learning material on the Moodle space. Although he presents the findings of one single case study the findings do nevertheless added to the emerging literature on the use of Moodle in the United Arab Emirates.

1.4 Background Information on Al-Ain Model Private School

Al-Ain Model Private School is a K-12 school in Al-Ain. It is located in the Falaj Hazaa area where a large number of schools are situated, which also creates greater competition between schools trying to attract good caliber pupils. The school is licensed by the Ministry of Education (MoE) as it followings the MOE's curriculum in all subjects. All subjects are taught in Arabic.

The teaching staff is a mixture of male and female teachers. Most of the teachers have bachelor degrees in their areas of expertise with the exception of two teachers; one holds a doctorate and the other a Master degree. The range of experience in years varies from newly qualified teachers to well-experienced teachers.

The school was inspected by ADEC in the academic year 2009/2010 and was rated 'unsatisfactory' according to the inspection report. A further inspection was carried out two years later in the academic year 2011/2012 and the school was acknowledged for taking some 'positive steps' (Summary Inspection Report; Feb-2012) towards progress. Nevertheless, these steps were considered inadequate because a further observation stated that they 'have yet to make a real difference to children's learning and achievement,' (p.3). Furthermore, the inspection report referred to teachers' 'lack of use of differentiation techniques' which resulted in variations in the pupil performance. The report went on to describe the school curriculum by stating that pupils are uninterested in learning because of the traditional approaches to teaching that are practiced by many of teachers at the school.

1.5 The Importance of Differentiated Instructions Through the Use of Moodle

Tomlinson and Eidson (2003) describe differentiation as 'just common sense' which most parents actually understand and practice among their children at home as they discover that their children are not identical in terms of abilities and skills. Nevertheless, in classrooms children come from different families and different backgrounds. Their abilities vary from children who are more abled and other children who need much more help and support.

It is expected that in a classrooms to have learners of varying ability levels and backgrounds. Effective teachers are able to incorporate various teaching techniques to address each and every child's need. According to Vygotsky's Zone of Proximal Development (ZPD), children can perform and learner better if they receive the right support and help from a peer or an adult. High performing children need to be stretched academically in order to ensure that they are engaged in the classroom. In addition, children who are struggling with their learning need to be given adequate help and guidance so that they can retain the necessary skills and improve their abilities. This can be done through effective mixed abilities group work that allows children to learn together. Other strategies such as grouping children of the same ability levels together gives teachers enough time to help the poor performing and challenge the most able.

Moodle, as a learning management system, is equipped with tools that facilitate synchronous and asynchronous learning. Teachers are able to practice differentiated instructions with their children through the use of these tools. Moodle allows teachers to group children according to their learning abilities. Teachers can also add content and resources that suit the diversity of learning styles and learning readiness. Moodle also allows children to learn collaboratively so that peer support is always visible. Moodle allows teachers to support their children after school or during weekends.

1.6 Moodle and the Impact on Child Motivation

From our experience as educators we have learnt that motivation is a key element to achieving effective teaching and learning. Williams and Williams (2011) state that 'Motivation is probably the most important factor that educators can target in order to improve learning' (p.1). They add that there is no one way that to motivate children and every teacher can do it according to the theory they see fit. The new generations of children are more comfortable with computers and gadgets. This can be used to ensure that children are motivated to learn both in school and outside the school. However, the use of technology in education may produce the results we would expect if both teachers and children do not receive the right type of training on the use of technology. Lambic, Pecanac and Egic (2012) argue that the use of information and communication technology (ICT) evokes child motivation:

> 'Although we have the general opinion that children have very positive attitude towards ICT, the research has shown that the level of children ' motivation is quite lower from expected and especially worrying is the lack of consciousness about the usefulness of certain ICT fields, and the whole subject' (Lambic, et al, 2012; 1187).

1.7 Study Research Questions

The purpose of this research study is to explore teacher perceptions of the use of Moodle as a learning management system at a private K-12 school and the possible impact on children's motivational levels and on the abilities of teachers to use differentiated instruction through the use of Moodle features. As this study is exploratory in nature, no hypotheses were created. However, this study was guided by the following research questions:

1. What are teacher perceptions regarding the strengths and limitations of using Moodle in a K-12 school?
2. Does the use of Moodle help to keep children motivated to learn?
3. Does the use of Moodle help to facilitate differentiated teaching and learning?
4. What are the key challenges (if any) that would need to be overcome in order to fully implement Moodle?

2. Methodology

This case study aims to explore teacher perceptions of the use of Moodle as a learning management system at a private K-12 school and the possible impact on children's motivational levels and on the abilities of teachers to use differentiated instruction through the use of Moodle features. The school follows the UAE Ministry of Education curriculum in all subjects; the language of instruction is Arabic. A selection of teachers from grades six, seven, eight and nine participated in this study. However, due to the time constraints and the fact that Moodle had only been introduced to the school for a short period of time only twelve teachers participated in this study.

Since our interest in this research is to explore teacher perceptions, this study is based on a qualitative approach. The twelve teachers were interviewed using open ended questions and the interviews took place towards the end of the school year (the only time teachers were available) in the library of the school premises. The interview questions were taken from the research questions, and also based on our readings of the literature on the use of Moodle in K-12 schools. The interviews included 19 questions; of which 16 were open-ended. Most of the interviews lasted for over an hour with a break at the interviewees' request. The selection of teachers was based on their willingness to participate, a representative sample from teachers in each department and across the different age groups. Three of the interviewees were teachers of English and their English speaking abilities were presumably good, however all of the interviews were carried out in Arabic as the language of instruction throughout the school is Arabic. Many of the teachers struggled to express themselves in English and therefore it was decided to conduct the interviews in Arabic to ensure rich data was attained. The experiences of the 12 teachers do not represent the experiences of all the teachers in the school but they provide an insight into how a group of teachers experienced the implementation of Moodle in their classrooms over the duration of one term. The interview transcripts were translated and we will now move on to provide a themed analysis of the data collated.

3. Results

Here is a themed analysis of the interview data which is presented under various themes which were drawn together following a through screening process of interview transcripts.

3.1 Teacher Perceptions on How Moodle Can Help in Enhancing Teaching and Learning

Teachers discussed several advantages to using Moodle as a learning management system in the school. The most distinctive advantage which the majority of teachers agreed on is that Moodle fosters communication and interaction between children and themselves and children and their teachers. Teacher A states that 'Interaction with children will be at its best as Moodle will give us new channels to have conversations and to post hidden messages to the children giving them the advice and the support they need'. Teacher D explains that Moodle will keep children busy by doing something useful.

Seven of the teachers explained that Moodle offered new approaches to conducting assessments and that it gives them immediate results, ensuring children are promptly informed about their current attainment levels. Teacher G explained that children can try as many times as they want. Teacher K, a teacher of English, said that they could ask children to use 'Wikis' to make their project. The fact that Moodle can be used from home is a key strength that was discussed at length by the teachers. Teacher E explains that 'Moodle gives the children an open space to participate as many times as they want'. Teacher A says 'Moodle will be a good substitution for Facebook which is wasting children's time and occupies their minds these days'. Four teachers felt that children can work at their own pace. One of them stated 'If a child was absent or was a daydreamer, he/she can catch up later'. Importantly children who do not participate in classroom activities will have a space to write and participate. Children will also have more exposure to the subject materials and significantly, Moodle will give the teachers the time and space they want to cover subject content and to enhance the curriculum with after-school activities.

A further strength for implementing Moodle, according to the teachers, is that it will offer more space for teachers to cover all aspects of the subjects they are teaching. For example, teacher J, who teaches Science, explained that Moodle would allow him to use as many examples and videos as the lesson requires. Teacher

D explained that Moodle would allow him to go beyond the textbooks and direct children to relevant websites that include useful information.

Other benefits noted by the teachers was regarding the experience that the children would gain in e-learning, because implementing Moodle in the school will introduce them to this for the first time. Nine teachers felt that Moodle will save time and effort not only in teaching but also in planning and marking children's work. Teacher L, for example, said that Moodle would help him in documentation as it automatically stores children's work. 'I will not have to keep piles of files'. Importantly, teachers stated that by using Moodle there would be less dependency on photocopying worksheets. Teacher D, who is the Arabic subject leader, observed that Moodle would give him a new way to evaluate teachers by their input and contributions. Teacher G explained that Moodle will help the school prepare the children for higher education. The teachers also raised various limitations to the possible use of Moodle. Teachers identified some limitations to implementing Moodle as a learning management system in this school. Among these disadvantages was the fact that many children belong to conservative families and the parents may not approve of the idea that their children have to stay connected to the internet at home in order to study, particularly their daughters. Moreover, five teachers thought that children may misuse Moodle and use it as an excuse to spend their time surfing the internet. Teacher B, for example, says, 'It may waste children's time as they might use the internet all the time with all the distracters available. It needs a great deal of controlling and follow up from teachers, subject leaders and administration'.

Two teachers felt that some children have poor study skills and can be distracted easily. Teacher F, states: 'We will need to train our children on self-discipline. Most of them have problems in commitment and in time management'. Teacher J shared her concern about authentication and children identity; many children have private tutors at home; others had their parents do their homework instead of them. Concerns about children exchanging passwords were also raised. Teacher A indicated that Moodle might not be as interesting as could be expected compared to other social network websites which children maybe engaged with. Children may lose interest in their learning if teachers are as strict as they are at the moment.

3.2 Teacher Perceptions of the Possible Link Between the Uses of Moodle and Impact on Child Motivation.

Teachers were very keen to respond to questions related to motivation and differentiation in teaching and learning. Five teachers explained that they did not believe that Moodle will motivate children especially in the first year of implementation as e-learning is seen as new concept to the teachers themselves, various stakeholders and importantly the parents. Teacher B, for instance, said that children would use something that they actually like. Three teachers also agreed that various Moodle features such as 'chat' and 'blogs' can be useful to motivate children.

Three of the teachers felt that Moodle features were particularly helpful for uploading visual aids (videos and pictures) which can be very effective when teaching children. Teacher C added that more abled children would be challenged, and the less abled learners would have enough time to learn and participate. He says, 'let's give them something they can do and they will be motivated'. Teacher A, who teaches Maths, states 'the opportunities that Moodle provides for high achievers to practice as many times as they want before an exam, they always ask for extra practice especially before a test'.

Most of the teachers agreed on the idea that Moodle could expose children to new possibilities and opportunities for them to work collaboratively and engage them in the process of learning. Teacher E, for example, stated that children would learn from each other and there many opportunities for collaborative work. Teacher L explained that shy children would be motivated to participate in group work, as currently boisterous children tended to dominate the whole class. As a consequence, less confident children were usually left behind. The teachers felt that in the virtual environments provided by Moodle, such children would have a safe place to learn where they would demonstrate their abilities and talents. They would also be involved in different school activities and participate in projects without being reluctant to share their ideas. Teacher B felt that group work strategies are easier to perform virtually because in the physical classroom children tend to be easily distracted and waste time chatting whereas the virtual classroom would an engaging environment for all children keeping them all on task.

Two teachers suggested that classroom teachers could make use of the extra space in time offered in Moodle by creating competitions which challenge and evoke children' minds so that they could feel encouraged to participate. Teacher B, for example, states 'there is not enough time for competitions in class and if time allows us, it usually disturbs other classes.' He added that competitions have a great impact on children and children usually are keen to take part. Four teachers suggested that Moodle could motivate less-abled learners as they would be given the opportunity to practice and use the materials which teachers post as many times as they want and this would build their own confidence. Teacher E, for example, stated that Moodle would also help teachers guide children according to their abilities and ambitions helping them to realize their full potential.

3.3 Teacher Thoughts on Their Ability to Practice Differentiated Teaching Using Moodle Platforms

All the teachers agreed that the implementation of Moodle as a learning management system would help them address children according to their individual learning levels and abilities. They all agreed that Moodle would provide a platform where they can design questions and activities that are suitable for each and every child's needs.

Seven teachers suggested that they could upload materials which would be appropriate to the children's different learning styles. Teacher J, for instance, stated that children would be able to choose from different activities according to their interests. He added that visual learners could have more time to watch pictures or watch videos. They could download the materials to their personal laptops or gadgets and watch them as many times as they want. Teacher J also states 'In classrooms, teachers usually use teaching aids just once or twice and then keep them in their drawers away from children'.

Three teachers said that they could use different strategies in grouping children. Teacher D explained that children could be grouped according to their learning styles. Teacher A explains that he could group children virtually according to their abilities and give each group the activities and support according to the group members' levels. In addition, Teacher F said that she could apply mixed abilities group strategies and children would learn from each other virtually while they feel safe and comfortable at home. She stressed the fact that poor performing learners would benefit from high achievers as they could see their work in the discussion forums or 'Wikis'. She added that children with high potential could learn from helping their peers as this can help identify areas of weaknesses. Two teachers suggested that Moodle would allow them to evaluate children according to their abilities. Teacher H said that Moodle features allowed him different ways and a new space to provide children with constructive feedback.

3.4 Some Considerations and Possible Challenges to the Implementation of Moodle

Teachers replied to the questions regarding the challenges in different ways. For example, teacher B said that the school should not hesitate in implementing Moodle. He states that '…there are no obstacles. Our children are used to technology'. However, teacher L said that the school administration should be patient and take this initiative in phases as radical implementation of Moodle would turn the school upside down and some parents would not like the idea of e-learning. He explains, 'the school looks traditional inside out and it will take time to convince the parents that their children are studying without textbooks'.

All of the teachers agreed that the issue of training is one of the most important tasks to tackle. Training workshops would be needed not only for teachers, children but also parents. For example, teacher A suggested that implementing Moodle would only be successful if training was adequate, so that teachers could take advantage of all the Moodle features. Teacher K believed that teachers must receive training on the learning theories that Moodle is based on. He also added that some teachers did not come from educational backgrounds and the concepts of constructivism and social constructivism are completely new to them. He added that some teachers would use Moodle as a platform merely to deliver traditional teaching. That is to say, they would use it as a platform to upload worksheets and mock exams only. Teacher D suggested that the school needs to find a way to equip and train children on using Moodle and highlight the benefits they could obtain from having such software to support their learning. He added that children should be informed that the use of Moodle would be part of their assessment.

Teacher A suggested that parents need to be involved in workshops to ensure that they understand why an efficient internet connection at their home is important, and why their children would need easy access to the internet. She believed that parents need to attend workshops to also learn how they can protect their children from the internet risks and distractions.

Seven teachers shared the view that the school administration should ultimately be responsible for organizing training sessions and workshops that are appropriate for everyone. The administration in consultation with the parents should look at the most appropriate timing for the workshops so that teachers would not be reluctant to attend. This is best achieved by proper consultation and consensus between all those concerned. Teacher F, for instance, explained that female teachers are usually the ones who struggle due to the number of training sessions they wouls be expected to attend after school hours, as they have families to take care of and training usually takes place after school hours or during the weekends. She explained that implementing Moodle would represent a huge change which would involve many hours of training and the school administration should find solutions to offer the required training without discriminating against female teachers, of whom many are working mothers.

Furthermore, seven teachers raised concerns regarding schools not having a transparent system for incentives which was the main reason why many teachers were demotivated. Teacher K, for example, stated that implementing Moodle would require him work to extra hours without extra pay. Teacher J said that the school administration should be clear about the benefits that the teachers would have for participating in such a project. In addition, teacher D explains that their salaries are barely enough for a decent living which is why many teachers work as private tutors and give all their time after school and in the evenings and the weekends to increase their income. He added that Moodle would occupy most of their time whether during work hours or after school.

4. Discussion

The teachers were generally in support of using Moodle in the school and many of them understood what Moodle is all about and its capabilities. Only one of the 12 teachers interviewed was, as he explains not too familiar with new technology, but even as he concluded it is the way forward and gave his support to moving Moodle forward at the school.

All twelve teachers that took part in this case study were from the Arab region and had an average of 12 years teaching experience, of which an average of four years had been spent at the school. Whilst they had no practical experience of using Moodle in previous teaching positions, they were well aware of its capability and functionality from the training session that they attended and the readings that they were provided with during the training sessions. Nevertheless due to time constraints teachers were only able to use the Moodle in their classroom for a term before data was collated. This obviously provided a limited view of the real impact of Moodle use in the classroom; however had Moodle been implemented in the school a few terms prior to this, the impact would have be considerably more notable. This led to them responding positively to both their perceived advantages and their perceived disadvantages.

The strengths they perceived were a reiteration of the most well-known Moodle features. For example, the perceived benefits for children were considered to be:

- ❖ All resources in one place
- ❖ Access is 'on demand' 24 hours a day, anywhere (where there is an internet connection), meaning that learning is not strictly limited to the classroom
- ❖ It is a social and interactive tool
- ❖ Grades allocated by teachers can be quickly accessed
- ❖ Resources are in a digital form
- ❖ Children absent from classes can potentially keep up

The advantages the teachers perceived for their own development were identified as:

- ❖ Much less paper
- ❖ Being able to track children ' progress
- ❖ Allocating children ' grades and marks easily
- ❖ Management of teaching handouts and visual aids

- ❖ Keeping track of homework
- ❖ Online paper-less tests and quizzes
- ❖ Allowing parents secure log-in access so that they can keep up to date with their child's work and progress

Whilst teacher perceptions of the benefits for children and teachers were many, this seemed to be to a large extent a result of the perceptions of what the limitations might look like. These perceived limitations are largely based on the limited training that they have had previously, but these were very real issues in the eyes of the teachers. There was a consensus amongst the teachers about the potential lack of internet access, or intermittent internet access, in the children's homes, and how this could create significant disadvantages.

A teachers' ability to effectively apply the principles of differentiated instruction (DI) can have a real positive impact on learning. Huebner (2010) suggests that a good practice of DI can lead to an enhancement in children's motivational level and engagement. In addition, the presence of Moodle as a platform with all its tools could create the perfect blend. Therefore for effective learning to take place, children should be motivated and this can be achieved through differentiated instruction where Moodle tools can serve as the 'nuts and bolts' that connect all the parts together. An important factor that needs careful attention in future research is the cultural considerations whereby many of Arab families at the school are conservative and may have objections to their daughters in particular spending hours connected to the internet at home. The challenge for the school – and indeed all schools in a similar position – is how to raise awareness of the use of technology in schools and how this can positively enhance their children's' educational experience. According to the Abu Dhabi Education Council's (ADEC) security requirements, schools have the capability to monitor sites accessed through school computer systems and can, if it is necessary, 'switch off' sites that are neither appropriate nor relevant to the school curriculum and activities. Of course, this is not possible in the home environment where the school has no such 'reach'. However, there are ways to manage this through a process of education and training and this should be provided by schools through parent briefing and raising awareness, and the use of well organized workshops. The school's position can also be greatly strengthened by the Abu Dhabi Educational Council through partnership with school principals to make arrangements to inform and educate parents about the value of e-learning, and the merits of virtual learning environments like Moodle.

A limitation observed by most of the twelve teachers relates to the potential additional workload for them, the lack of training for teachers, poor and inadequate school facilities and a lack of financial remuneration for what the teachers consider to be additional responsibilities and an encroachment into their personal time. Perhaps one of the major hindrance to be overcome is teachers' own beliefs that they are not properly 'valued' because wages are generally low and any additional demands are made from teachers for an improvement in their financial package to accommodate the Moodle project are unlikely to be favorably received by the owners and the Board of Governors of the school. Such perceptions and the consequences that these perceptions are likely to have, indicates that teachers need to feel valued and appreciated even before the Moodle initiative can be implemented. Many teachers were unwilling to take on additional duties without a real measure of both recognition and financial compensation. Training teachers on how to use Moodle effectively is a key element to Moodle implementation.

5. Conclusion

The experiences of the teachers in this study provide an indication that a training program is a prerequisite to them undertaking what some may consider being a significant additional amount of work, and an extra burden for which there will be no likelihood of any financial remuneration. To conclude, it seems that teachers perceive Moodle as a useful tool to enhance their ability to teach and to use differentiated instruction effectively. The interview data indicates that teachers are welcoming of the introduction of Moodle, subject to appropriate and sufficient training being provided and appropriate remuneration for the additional training load. The findings do not allow for a generalization regarding the belief that Moodle will

improve the motivation levels of children. Finally, it is important to stress that this is one case study based on a small research sample of teachers from one school.

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