Do Staff And Students At The Secondary Setting Believe That Mobile Device Use In Classrooms Can Aid Students In Accessing The Curriculum?

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**Abstract**

The use of mobile devices in the secondary classrooms is increasing everyday. Teachers, students and administrators are constantly using their mobile devices. They use them to respond to e-mails, connect with others via social media, play games, and find information on the Internet. There is a constant influx of technology into the classroom and into student’s hands. Technology has, arguably, been the largest change in education in the last 20 years. In this research report we examine the perceptions about the use of mobile devices within the secondary classroom.

**Introduction**

***Statement of Problem***

In the advancements of technology today do students and staff feel like mobile devices can enhance their learning? After reviewing literature there is mixed reviews on whether mobile devices are a distraction or a benefit in the secondary classrooms. Slowly trends are starting to shift to the belief with proper training and clear expectation students and staff can use mobile devices to aid in their academic achievement. A survey was created and given students and staff at a middle and high school to get their input on how they currently use mobile devices and if they feel they can be useful in the secondary classrooms.

***Review of Literature***

 If you ask most secondary students what are your top three items on your wish list, the majority will have the newest and latest cell phone on their list (Starkman, 2007). Cell phones have become such an important item to many people including secondary students. With most students having mobile devices they have become a controversial topic in many school districts nationwide. Many schools have a strict cell phone policy due to the fact that administrators and teachers believe cell phones are a distraction to student learning (Johnson & Kritsonis, 2007). Administrators are not only worried about the distracting nature of cell phones but students cheating, taking inappropriate photos or video recording according to Obringer & Coffey (2007). There is even a concern of cell phone dependency and its correlation with behavioral addictions that could affect students learning (Jenaro, Flores, Gomez, Gonzalez-Gil, & Caballo, 2007). Some studies follow these beliefs and show that mobile devices are a distraction to students and teachers (Obringer & Coffey, 2007). Other studies show students can be responsible and use cell phones to enhance their academics (Liu, Horton, Olmanson, & Toprac, 2011). As technology advances and more research is being done, many teachers and administrators are changing their school of thought. Before schools or classrooms change their policies or move to using cell phones for academic purposes, it is important that they get the students perspectives (Humble-Thanden, 2011).

 *School of Thought*

In education, it primarily concerns itself with the development of students’ cognitive and communicative processes. In the context of school wide policies that prohibit students’ mobile device use, the goal of research is to understand how adolescents rationalize their use of mobile devices in classrooms, as well as the dynamics between teachers and students in establishing consensus of mobile device use within classrooms (Charles, 2012).

 Previous studies demonstrate that student use of digital devices can have a negative effect on student learning (Duncan, Hoekstra, & Wilcox, 2012). However, other studies push past that understanding and seek to discover if greater student engagement and peer instruction can offset the negative effects of digital device usage among students. With this knowledge, professors and teachers alike would be able to better organize their instructional strategies in order to offer the most engaging and accommodating learning environment to students in a growing digital age.

 *Trends*

 Cell phones have been viewed primarily as a distraction to students and teachers but there is a shift beginning in society through the context of schools’ cell phone polices and reforms; today, many schools encourage students and teachers to use their mobile devices to enhance their learning experiences, rather than prohibiting their use. Through previous research, teachers are understanding that students have trouble multi-tasking when using their mobile devices, so if teachers instruct students how to use mobile devices to enhance their learning in the classroom, learning can become more effective (Duncan, et. al. 2012).

A recent study carried out by Charles (2012) confirmed the phenomenon that students and many teachers break schools’ mobile device policies, because they seem impossible, and under specific circumstances unreasonable to enforce, as the devices could actually be used to enhance learning. Instead, many teachers negotiated rules with their students in their classroom settings to regulate students’ mobile device use. While the majority of students self-regulated their mobile device use according to their beliefs of what is socially acceptable and not detrimental to their learning, adhering to the teacher negotiated mobile device rules depended on the trust relations between both parties.

Charles (2012) states, “If we created rules and policies in a more democratic manner, our students would probably be more engaged and more accepting of the rules.” Charles (2012) explains, “Teachers and students alike see the need to shift from authoritative teaching roles toward a more democratic negotiation of classroom interaction based on relationships of trust and respect.” Differing from simple negotiation of policies and rules, this idea really encompasses a broader understanding of democratic interaction in the classroom.

 Many current studies are showing that Project Based Learning (PBL) is very effective. Teachers that are using technologically based curriculum are effectively engaging students in learning activities (Liu, et. al. 2011). Even though some PBL activities are involved or foreign to students, due to the use of technology they are still finding them fun and interesting and are learning the content.

 *Methodologies*

 Data on cell phone usage has been collected through a combination of surveys, classroom observations, and participants’ interviews. Procedures for analyzing some of the study’s data included a comparison of the participants’ individual statements as well as interactions within their settings to help with the reliability of their answers. The results formed inductively developed categories for mobile device uses in classrooms (Charles, 2012).

Some studies assessed administrators’ nationwide perspectives on issues associated with cell phones in educational settings (Oringer and Coffey, 2007). The survey’s instruments pertained to school wide cell phone policies and usage. The surveys revealed that district wide prohibitive student cellphone user policies were in place in the majority of schools nationwide, and parents seemed to agree to them.

 Other studies focused on the students’ and teachers’ perspective and if they felt mobile devices can be used effectively as a learning tool in the classroom (Humble-Thanden, 2011). These studies have used surveys, interviews, and observations with open-ended questions and Likert scale ratings. All data was then compiled and result given.

***Research Question, Hypothesis and Foreshadowed Problems***

In this study, the researchers examined the question: Do staff and students at the secondary setting believe that mobile device use in classrooms can aid students in accessing the curriculum? The hypothesis of the group prior to delving into the research was that mobile devices in the classrooms acted as more of a distraction to students in the school setting than as way of engaging the students into the lesson.

There were several foreshadowed problems inherent in this type of study. The biggest problem of this study is that of perception. Since this study was based on a survey on what students and staff felt rather than solid numerical data our results were based more on opinion that factual evidence. The next foreshadowed problem was that of sample size. Due to the time constraints, we were limited to the use of a relatively small sample size. Consequently, our results could not be generalized to apply to different populations of students.

***Definitions of Terms***

 For this study, the following definitions apply. Secondary refers to grades sixth through twelfth grades. Mobile devices are cell phones. School of thought is group of peoples’ similar belief. Cognitive process is how students mentally process and store information. Peer instruction refers to students learning from and teaching other students. Instructional strategies are how teachers teach the information. Accommodating learning environment means things that can be done or changed to help students learn the information. Trends are things that are popular or the belief of many. Self-regulated is where students can monitor their own behavior without others enforcement. Authoritative teaching is where just the teacher tells the class what they are to do without getting any input from the class. Democratic teaching is where the teacher involves the whole class in decision-making. Technologically based curriculum is teaching material that uses technologically such as computers, tablets, cell phones, clickers, and smart boards. Likert scale is a rating system on surveys such as strongly agrees to strongly disagree.

***Significance of the Proposed Study***

The use of mobile devices in the secondary classrooms is increasing everyday. Teachers, students and administrators are constantly using their mobile devices. They use them to respond to e-mails, connect with others via social media, play games, and find information on the Internet. There is a constant influx of technology into the classroom and into student’s hand. This study is significant because it examines the way that the personal mobile devices are used within the classroom. It also examines whether the use of those devices is a help or a hindrance to the student’s engagement into the daily lessons.

**Design and Methodology**

***Subjects***

The subjects that participated in the study consisted of a random selection of students and staff from a middle school and a high school in Southern California. The students and staff were chosen at random in order to provide an unbiased view of the student and staff population. In this manner, the researchers hoped to prevent any previous knowledge about specific classrooms or teachers from influencing their analysis and understanding of the data.

The middle school that was utilized in the study is Wells Middle School and is located in Riverside, California. Wells Middle School is a comprehensive public school that serves grades six through eight and follows a traditional calendar. According to the most recent school accountability report card, which used statistical information obtained from the Alvord Unified School District and the California Department of Education, during the 2012-2013 school year Wells Middle School had a total population of 1028 students. Of those students, 11% received special education services and 75% were designated as English Language Learners. In addition, Wells Middle School serves a very low socioeconomic population with 95% of its’ students qualifying for free or reduced cost lunch. With regards to the breakdown of student enrollment by ethnic group in the 2012-2013 school year, Wells Middle School was stratified as follows: Hispanic or Latino (92.70 %), Caucasian (3.50 %), African-American (1.80 %), American Indian or Alaskan Native (0.70 %), Asian (0.60 %), Pacific Islander (0.30 %), Filipino (0.20 %), Multi Racial (0.20 %). In 2013,Wells Middle School earned an Academic Performance Index (API) score of 735.

At Wells Middle School, there were a total of 30 participants in the study. Of the 30 participants, 20 were students that ranged from grades six through eight. Of these students, 8 were female and 12 were male. With regards to the remaining 10 adult participants, 5 served as classroom teachers and 5 served as paraeducators. Of the 5 teachers, 3 were male and 2 were female. These teachers taught grades six through eight. Of the 5 paraeducators, 4 were female and 1 was male. The paraeducators provided indirect special education services to students in grades six through eight.

The high school that was utilized in the study was Grand Terrace High School in Grand Terrace, California. Similar to Wells Middle School, Grand Terrace High School is a comprehensive public school. In contrast to Wells Middle School, Grand Terrace High School serves students in grades nine through twelve and follows a traditional calendar. According to the school’s current school accountability report card, which used statistical information obtained from the Colton Joint Unified School District and the California Department of Education, 1701 students were enrolled during the 2012-2013 school year. Of those students, 23% qualified for English Language Learner support and 11% qualified to receive special education services. Similar to Wells Middle School, Grand Terrace High School serves a high proportion of low socioeconomic students as 68% of its’ students are eligible to receive free or reduced price lunch. At Grand Terrace High School, the ethnic breakdown of student enrollment during the 2012-2013 school year consisted of the following: Hispanic or Latino (69.00 %), Caucasian (15.40 %), African-American (9.10 %), Asian (2.20 %), Filipino (1.80 %), Multi Racial (1.30 %), American Indian or Alaskan Native (0.60 %), Pacific Islander (0.60 %). In 2013, Grand Terrace High School received an Academic Performance Index (API) score of 688.

At Grand Terrace High School, the researchers utilized a total of 25 participants. Of the 25 participants, 20 were students who ranged from grades nine though twelve. Of these students, 10 were male and 10 were female. The remaining 5 participants from Grand Terrace High School consisted of 4 teachers and 1 paraeducator. Both the teachers and the paraeducator provided educational services that benefitted students in grades nine through twelve, with the paraeducator doing so in a special education setting. Of these staff members, 3 were male and 2 were female.

***Instrumentation and Data Collection***

The researchers formed a research group with the intent of attempting to address the aforementioned issue of mobile device use amongst staff and students at the secondary level of education and whether or not staff and students believe this usage to be potentially beneficial to student learning. Given time constraints, the researchers sought to develop an instrument that would have a high level of usability while simultaneously remaining valid and reliable. As a result, the researchers developed a subject-completed survey instrument. The survey was developed through close collaboration between the researchers and was developed in three steps. First, the researchers discussed and delineated the important issues that related to the abovementioned issue. The researchers determined that the important issues that should be addressed in the instrument were school and classroom policies regarding mobile device usage, appropriate vs. inappropriate usage, type of usage, and perception of the benefit of mobile device usage. Second, the researchers individually drafted survey questions and then revealed them to fellow researchers and found commonalities. After identifying common questions, the researchers chose 16 questions to be included on the survey. Third and lastly, the researchers compiled the questions into an easily accessible survey and tested the instrument by allowing fellow classmates to take the survey and provide feedback. Upon receiving positive feedback from several classmates, the researchers concluded that the instrument was ready to be used.

 The instrument consists of a two-page subject completed survey. The survey consists of 16 questions. Questions one through three are demographic in nature and seek to determine the subject’s role within their school, gender, and grade level. Questions four through six seek to determine the amount of mobile device usage in the subject’s classroom and whether or not the subject is aware of specific policies regarding mobile device usage in their school and classroom. Questions seven and eight seek to determine the subject’s outlook on the potential benefit of mobile devices on student learning and whether or not that benefit is actually occurring in their classroom. Questions nine through eleven seek to quantify mobile device usage and determine how often, if ever, mobile devices are used appropriately and inappropriately in the subject’s classroom. Questions twelve through sixteen seek to determine the exact type of mobile device usage that occurs in the subject’s classroom and how often, if ever, each type of usage occurs. The types of usage that subjects are able to identify are Calculator/Learning Tools or Apps, Social Media, Music, Games, and Texting/Calls. This survey instrument can be observed in the Appendix.

Once the instrument was deemed adequate, the researchers contacted the principals of the aforementioned secondary schools, Wells Middle School and Grand Terrace High School, and obtained permission to give the survey out to students and staff members. Once permission was granted, the researchers sent out emails to the entire staff informing them that their assistance would be greatly appreciated in conducting a survey that would assist a research study. The survey instruments were then randomly placed in teacher mailboxes with instructions to return any completed surveys to the researcher’s respective mailboxes in sealed, unmarked envelopes that were free of any markings or writings that would indicate the identity of the student or staff member who had completed the survey. Lastly, the researchers collected the completed surveys and carefully began the data treatment process.

***Data Treatment Procedures***

 The collected surveys were examined; those that did not meet the validity criteria, due to incompleteness or mischievous responses, such as marking all or several answers per question, were excluded from the data sample. Next, the survey instruments were divided according to their survey settings and respective teacher, paraprofessional, and student subsample groups. By hand, tables were created per subsample groups and response categories. Responses were counted and recorded using the tally mark method. A group discussion followed, which resulted in the decision to exclude two instrument questions, number six and twelve, as they were redundant. For measures of central tendency, specifically to calculate the mean, the check list and five-level Likert item responses were converted to ordinal data sets. The instruments’ check list ‘yes’ responses were assigned the numerical value of 1, and ‘no’ was represented by ‘0’. The five-level Likert item ranking system was assigned values as follows: 1 for ‘a = never’, 2 for ‘b = rarely’, 3 ‘c = sometimes’, 4 for ‘d = often’ and 5 for ‘f = always’. The total responses per question, assigned ranking values and subsample groups were added and divided by the amount of cases in each subsample. The results were noted by hand in the respective tables. Next, WMC and GHTS data set tables were combined and entered in and Microsoft Excel spreadsheet, according to check list and Likert scale responses by sample subgroups. At that time, the combined median and mode measures of central tendency were counted and tracked as well. The combined data treatment resulted in two spreadsheets per subgroup sample, with a total of six spreadsheets. Each set of the two spreadsheets consisted of one that reflected the checklist ‘yes’ and ‘no’ data, and one the reflected the Likert item data. They further included the respective survey instrument questions, the ordinal data equivalences of each response option, as well as mean, median and modes. The statistical procedures for this study left a margin of error because statisticians generally not recommended using Likert item rankings for the purpose of identifying specific trends expressed as mean; the differences in distance between the ranking items are subjective and arbitrary, rather than equal which is what an ordinal scale assumes. Thus, interpreting Likert item rankings through mean calculations can lead to false, or somewhat skewed conclusions. However, in context of this study’s median and mode measures of tendency, the mean appeared to reflect the subgroups responses accurately.

***Presentation of Findings***

Combined Check List Responses

 In context of the surveyed schools’ prohibitive mobile device policies, and the question this research is seeking to answer, “Do staff and students at the secondary setting believe that mobile device use in classrooms can aid students in accessing the curriculum?”, statistical significance of the study’s three subgroup samples’ check list responses was reflected by three of the five questions, as noted below and shown in Tables 1, 2 and 3:

 Question 7: Can mobile devices help students learn in classrooms?

 Sixty-six percent of teacher and paraprofessional respondents believed that mobile devices can help students learn. Both sample subgroups’ median and mode measures presented and confirmed a central tendency of the ‘yes’ response to this question. This data was reflected in Table 1 and 2. Students responded to the same question with a mean of seventy-two point five percent, with median and mode measures of central tendency of the ‘yes’ response, confirming the mean, as shown in Table 3.

 Question 4: Are mobile devices widely used in your classroom?

 Forty-four percent of the teacher subsample group stated that devices are widely used in classrooms. Median and mode show a central tendency of the ‘no’ response to this question, as reflected in Table 1. Paraprofessionals presented a mean of sixty-six percent, with a median and mode that reflected the ‘yes’ response , as noted in Table 2. Students showed a mean of fifty-five percent, and showed a median and mode indicating ‘yes’ as the central tendency, as reflected in Table 3.

 Question 5: Does school policy permit mobile device use in classrooms?

 Eleven percent of the surveyed teachers thought that school policy permits mobile device use, which translates to eighty-nine percent of teachers who were aware of the prohibitive mobile device school policy. Median and mode measures revealed a central tendency of ‘no’ responses, which deductively placed in alignment with the mean. This data is reflected in Table 1. Paraprofessionals reported a mean of zero percent, with median and mode likewise at zero, which translated to a central tendency of the ‘no’ response to this question, as recorded in Table 2.

 Students responded to this question with a mean of less than one percent, with median and mode measures of central tendency that translated to the ‘no’ response, as noted in Table 3. Noteworthy is that of the three sample subgroups, paraprofessionals and students were most accurately aware of the schools’ mobile device policies.

Combined Likert Item Responses

 The six Likert items pertained to teachers’, paraprofessionals’ and students’ usages of mobile devices within classrooms. In analysis of Likert Items 2, 3, and 4, which pertained to usage of mobile devices within classrooms that were not related to learning and instructions, such as social media, music and game uses, students’ self-reporting showed that this group engaged in these activities ‘rarely’ with tendency to ‘sometimes’, while teachers’ and paraprofessionals’ stated that they use their mobile devices for such activities during instruction ‘never’ to ‘rarely’. In reference to the surveyed schools’ prohibitive mobile device use policies, and this study’s research question, statistical significance of the three subgroup samples’ was noted in two of the six questions, as noted below and shown in Tables 4, 5, and 6:

 Question 11: How often are cell phones used inappropriately in classrooms?

 The teacher subgroup sample responses showed a mean value of 3.77, which placed in the upper ‘sometimes’ ranking category, in close proximity of the ‘often’ category. Median showed a value of 3, which translated to the ‘sometimes’ ranking, and mode presented a value of 4. This aligned with the ‘often’ ranking. Table 4 references these findings.

 Paraprofessionals’ responses to this questions showed a mean of 4.16, which fell slightly above the ‘often’ category. Median was 5 with an equivalent ranking of ‘always’. Mode presented with a value of 4, which aligned with the ‘often’ ranking. Table 5 shows the datasets of this subgroup sample.

 Students’ responses reflected a mean value of 3.18, which fell in the slightly above ‘sometimes’ category. Median was 3, which aligned with the ranking category ‘sometimes’, and mode pointed with a value of 4 to the ‘often’ category. Table 6 reflects the student sample subgroup.

 Question 1: How often do you use your mobile device’s calculator or learning apps during instruction?

 Teachers’ responses presented at 3.55 mean, which equated to statements that translate to more than sometimes, but less then often. Median equated to a value of 2.5, which placed between rankings ‘rarely’ and ‘sometimes’. Mode showed response category ‘often’ with a value of 4. Table 4 references these findings. Paraprofessionals responded to this question with a mean value of 1.66, which translated to a placement between the ‘never’ to ‘rarely’ categories. Median aligned with the ‘rarely’ ranking category with a value of 2, and mode fell in the ‘never’ range with a value of 1, as reflected in Table 5.

 Students’ responses showed that they use the calculator function on mobile devices on average at a value of 2.93, which is the upper ‘rarely’ category, where a value of 3 represents the ‘sometimes’ category. Median reflected the ranking of ‘often’ with a value of 4, and mode presented a 3, indicating the ‘sometimes’ category. These finding s are reflected in Table 6.

Data Tables

**Check List Item Tables**

**Table 1**: WMS and GTHS Combined Teacher Responses

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WMS & GTHS** |  **Teachers (n=9), Significance: \*\*** |  |  |  |  |  |  |  |  |
| **Y/N Questions** |  |  |  |  |  | **YES (1)** | **No (0)** | **Mean** | **Median** | **Mode** |
| 5 | School policy permits mobile device use in classrooms? |  | 1 | 8 | 0.11\*\* | 0 | 0 |
| 4 | Mobile devices are widely used in your classrooms? |  | 4 | 5 | 0.44 \*\* | 0 | 0 |
| 9 | Do you regularly use a mobile device within the classroom? | 1 | 8 | 0.11 | 0 | 0 |
| 7 | Mobile devices can help students learn in classrooms? |  | 6 | 3 | 0.66\*\* | 1 | 1 |
| 8 | Mobile devices are currently used to increase learning? |  | 2 | 7 | 0.22 | 0 | 0 |

**Table 2:** WMS and GTHS Combined Paraprofessional Responses

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WMS & GTHS** | **Paraprofs. (n=6)****Significance: \*\*** |  |  |  |  |  |  |  |  |
| **Y/N Questions** |  |  |  |  | **YES (1)** | **No (0)** | **Mean** | **Median** | **Mode** |
| 5 | School policy permits mobile device use in classrooms? |  | 0 | 6 | 0\*\* | 0 | 0 |
| 4 | Mobile devices are widely used in your classrooms? |  | 4 | 2 | 0.66\*\* | 1 | 1 |
| 9 | Do you regularly use a mobile device within the classroom? | 1 | 5 | 0.16 | 0 | 0 |
| 7 | Mobile devices can help students learn in classrooms? |  | 4 | 2 | 0.66\*\* | 1 | 1 |
| 8 | Mobile devices are currently used to increase learning? |  | 0 | 6 | 0 | 0 | 0 |

**Table 3:** WMS and GTHS Combined Student Responses

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WMS & GTHS** |  **STUDENTS (n=40)****Significance: \*\*** |  |  |  |  |  |  |  |  |
| **Y/N Questions** |  |  |  |  | **YES (1)** | **No (0)** | **Mean** | **Median** | **Mode** |
| 5 | School policy permits mobile devices use n classrooms? |  | 3 | 37 | 0.075\*\* | 0 | 0 |
| 4 | Mobile devices are widely used in your classrooms? |  | 22 | 18 | 0.55\*\* | 1 | 1 |
| 9 | Do you regularly use a mobile device within the classroom? | 16 | 24 | 0.4 | 0 | 0 |
| 7 | Mobile devices can help students learn in classrooms? |  | 29 | 11 | 0.725\*\* | 1 | 1 |
| 8 | Mobile devices are currently used to increase learning? |  | 15 | 25 | 0.375 | 0 | 0 |

**Likert Item Tables**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 4;** Teachers:LIKERT SCALE Questions Key : a = never, b = rarely, c = sometimes, d = often, d = alwaysSignificance: \*\* |  | a = 1 | b = 2 | c = 3 | d = 4 | e = 5 | **Mean** | **Median** | **Mode** |
| 10 | How often are cell phones used appropriately in classrooms?  |  |  | 2 | 3 | 6 | 0 | 0 | 2.88 | 2 | 3 |
| 11 | How often are cell phones used inappropriately in classrooms?  |  |  | 0 | 1 | 1 | 6 | 1 | 3.77\*\* | 3 | 4 |
| 1 | How often do you use your mobile device's calculator/learning apps during instruction? |  | 1 | 1 | 3 | 5 | 0 | 3.55\*\* | 2.5 | 4 |
| 2 | How often do you use your mobile device for social media during instruction? |  | 8 | 2 | 0 | 0 | 0 | 1.11 | 1.5 | 1 |
| 3 | How often do you use your mobile device for music during instruction? |  |  | 7 | 1 | 1 | 1 | 0 | 1.77 | 2 | 1 |
| 4 | How often do you use your mobile device for games during instruction? |  |  | 8 | 1 | 0 | 0 | 1 | 1.66 | 2 | 1 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 5;** Paraprofessionals:LIKERT SCALE Questions Key : a = never, b = rarely, c = sometimes, d = often, d = alwaysSignificance: \*\* |  |  | a = 1 | b = 2 | c = 3 | d = 4 | e = 5 | **Mean** | **Median** | **Mode** |
| 10 | How often are cell phones used appropriately in classrooms?  |  |  |  | 2 | 3 | 1 | 0 | 0 | 2 | 1 | 2 |
| 11 | How often are cell phones used inappropriately in classrooms?  |  |  |  | 0 | 0 | 1 | 3 | 2 | 4.16\*\* | 5 | 4 |
| 1 | How often do you use your mobile device's calculator/learning apps during instruction? |  | 3 | 1 | 2 | 0 | 0 | 1.66\*\* | 2 | 1 |
| 2 | How often do you use your mobile device for social media during instruction? |  |  | 5 | 1 | 0 | 0 | 0 | 1.16 | 1 | 1 |
| 3 | How often do you use your mobile device for music during instruction? |  |  |  | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 4 | How often do you use your mobile device for games during instruction? |  |  |  | 5 | 1 | 0 | 0 | 0 | 1.16 | 1 | 1 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 6;** Students:LIKERT SCALE Questions Key : a = never, b = rarely, c = sometimes, d = often, d = alwaysSignificance: \*\* |  | a = 1 | b = 2 | c = 3 | d = 4 | e = 5 | **Mean** | **Median** | **Mode** |
| 10 | How often are cell phones used appropriately in classroom?  |  |  | 5 | 9 | 21 | 5 | 1 | 2.78 | 2.5 | 3 |
| 11 | How often are cell phones used inappropriately in classrooms?  |  |  | 5 | 10 | 6 | 16 | 4 | 3.18\*\* | 3 | 4 |
| 1 | How often do you use your mobile device's calculator/learning apps during instruction? |  | 3 | 10 | 20 | 6 | 2 | 2.93\*\* | 4 | 3 |
| 2 | How often do you use your mobile device for social media during instruction? |  | 8 | 8 | 16 | 6 | 3 | 2.78 | 2 | 3 |
| 3 | How often do you use your mobile device for music during instruction? |  |  | 8 | 10 | 15 | 8 | 0 | 2.63 | 2.5 | 3 |
| 4 | How often do you use your mobile device for games during instruction? |  |  | 15 | 16 | 6 | 4 | 0 | 2.03 | 3 | 2 |

**Limitations of the Design**

 Generalization of this study’s findings should be avoided, because the staff subsample group size was too small; the ratio of the staff to student sample groups was approximately one to four. In addition, as the surveys were randomly distributed, the overall small student sample size allowed for validity issues, due to possible mischievous respondents caused by a lack of maturity within the sample size. Furthermore, the survey instrument’s questions could have been designed more meaningfully to answer the question that this study sought to confirm in a more informative manner. For example, questions about specific mobile device uses for learning could have been presented to afford the sample the opportunity to indicate how mobile devices can make the curriculum more accessible for learning and instruction. Lastly, the multipage format and layout of the surveys appeared to be confusing for some responders, as was some of the wording. During initial data treatment it was noted that some students appeared to have overlooked page two of the instrument, and thus did not complete them.

**Conclusions**

Researchers found in this study that their original hypothesis that mobile devices use was more of a hindrance than a help to student learning and engagement was supported by the collected data. According to the responses, teachers felt that mobile devices were used inappropriately in the classroom “often” with a mean value of 3.77. Paraprofessionals also believed that mobile devices were used inappropriately in classrooms “often” with a mean response of 4.16. Students felt that their use was only inappropriate “sometimes” with a mean of 3.18. Of those surveyed, all participants agreed that tools such as calculators and learning apps were used rarely on their mobile devices. This data was in direct contrast to the original student response that mobile devices were only used “sometimes” inappropriately. In summary, this research study finds that although a large portion of the secondary school community owns some type of mobile device they are not being put to good use. The students have a wealth of tools and information at their fingertips and, in current practice; they are more likely to access social media than engage in the curriculum.

**Recommendations for Further Research**

Mobile device use is a new and evolving field of study. The research into this field was conducted on a small scale over a brief period of time. Consequently, the research into this topic was limited. Further research needs to extend over a longer period of time with a much larger sample size to get more generalized results. Also, the sample should contain a more comprehensive perspective on mobile device use. Both schools surveyed were low socioeconomic status, which immediate skewed the results. To get a more representative sample, researchers should also include students and staff with high socioeconomic status. This can be done by reviewing School Accountability Report Cards and finding schools that meet the criteria. By widening the survey pool to include a more representative sample it would be more likely for researchers to get more comprehensive and accurate results. Researchers could also use different data collection methods such as observation and interview to get a more comprehensive picture of the data rather than basing all results on a perceptual survey. If further researchers decide to use a survey, they should design the survey to be contained all on one page or have an arrow that says “Go on” at the bottom of the page to ensure all surveys are completed fully. Finally, the further research should focus on ways to utilize mobile devices to increase student engagement and achievement.

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Appendix

Survey

1. Please circle your role within the school: Teacher Paraprofessional Student
2. What is your gender? Male Female
3. What is your grade level? 6 7 8 9 10 11 12 N/A
4. Are mobile devices widely used within your classroom? Yes No
5. Does your school policy allow use of student devices within the classroom? Yes No
6. Are you allowed to use mobile devices in specific classrooms? Yes No
7. Do you feel the mobile devices can be used to help students to learn in the classroom?

Yes No

1. Do you feel that mobile devices are currently being used to increase student learning?

Yes No

1. Do you regularly use a mobile device in the classroom? Yes No
2. How often are cell phones used in an ***appropriate*** manner in the classroom?
	1. Never
	2. Rarely
	3. Sometimes
	4. Often
	5. Always
3. How often are cell phones used in an ***inappropriate*** manner in the classroom?
	1. Never
	2. Rarely
	3. Sometimes
	4. Often
	5. Always
4. What do you use your mobile device for during instructional time? Circle all that apply.
5. Calculator/Learning Tools or Apps
6. Social Media
7. Music
8. Games
9. Texting/Calls
10. How often do you use your mobile device for calculator/ learning tools or apps during instructional time?
	1. Never
	2. Rarely
	3. Sometimes
	4. Often
	5. Always
11. How often do you use your mobile device for social media during instructional time?
	1. Never
	2. Rarely
	3. Sometimes
	4. Often
	5. Always
12. How often do you use your mobile device for Music during instructional time?
	1. Never
	2. Rarely
	3. Sometimes
	4. Often
	5. Always
13. How often do you use your mobile device for games during instructional time?
	1. Never
	2. Rarely
	3. Sometimes
	4. Often
	5. Always
14. How often do you use your mobile device for texting/calls during instructional time?
	1. Never
	2. Rarely
	3. Sometimes
	4. Often
	5. Always